cornerstone
A TETRA TECH COMPANY

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Via Electronic Mail

January 20, 2017

Joseph A. Gowers
Remedial Project Manager
Emergency and Remedial Response Division
USEPA Region II
290 Broadway, 19th Floor
New York, New York 10007-1866

Re: Ringwood Mines/Landfill Superfund Site
Letter Report of Focused OCDA Investigation

Dear Mr. Gowers:

On behalf of Ford Motor Company (Ford), this letter report presents the findings and results of the focused investigation within the O'Connor Disposal Area (OCDA) at the referenced Site, as presented in a Work Plan dated November 8, 2016, which was approved by the USEPA on November 23, 2016. The objective of the focused investigation was to assess whether or not a localized source of 1,4-dioxane exists within the former paint waste removal area within the OCDA. As shown in the enclosed Figure 1, this former paint waste removal area is hydraulically up-gradient of groundwater monitoring well OB-17 in which groundwater samples have exhibited a concentration of 1,4-dioxane above its New Jersey Interim Specific Groundwater Quality Criterion (ISGWQC).

In summary, a total of 43 samples (41 native samples and two blind duplicates) were collected from a sampling grid within the former paint waste removal area. 1,4-dioxane was not detected in any of the 43 samples collected, and a localized source of 1,4-dioxane was not identified. In addition, paint waste was not identified in any of the borings.

At the request of the USEPA, in addition to the soil samples, two samples of paint waste surficial fragments were also collected from the OCDA during the field activities, and were also analyzed for 1,4-dioxane. The laboratory analytical results indicate that no 1,4-dioxane was reported in either of the two paint waste samples.

The work scope and findings of the targeted soil investigation are provided in detail below.

Field Procedures

Mobilization to the Site for performance of the boring program occurred on December 12, 2016, at which time the boring locations were field staked using GPS coordinates and access to the drilling locations was cleared with a small bulldozer. Five boring locations (2, 3, 5, 11, and 14) were field adjusted to enable drill rig access. The final boring locations in relation to the sampling grid shown in the approved Work Plan are shown in the attached Figure 1. As shown, the boring location adjustments were nominal and did not affect the overall program of sampling within the former paint waste removal area.

Borings were advanced using a track-mounted sonic drill rig during the period December 13-15, 2016 and all activities completed and equipment demobilized on December 16, 2016. Continuous soil cores were attempted at each location; however, due to the granular nature of the soils at some locations (i.e., loose sand, stone aggregate that would not fit in the core sleeve), continuous core sample collection was not possible at every boring due to a lack of recovery. Finer-grained soils did remain in the core sleeve which are the preferential sample material since, if 1,4-dioxane was present, it is more likely to have been retained in finer-grained soils than on coarser material. The Boring Logs are provided as Attachment A.

Soil cores were collected in acetate sleeves. Upon retrieval, each soil core was subjected to the following:

- Screening with a Photoionization Detector (PID);
- Visual inspection for any apparent evidence of waste, paint waste, discoloration, or any other indication of potential environmental concern;
- Olfactory evidence of odors; and
- Evidence of having encountered the groundwater table (i.e., saturated soil).

Samples for laboratory analysis were collected based on the results of the above screening process with samples biased towards the following:

- A PID reading;
- Evidence of discoloration, waste, etc.;
- A zone indicating any odor; or
- If none of the above were indicated, within a representative portion of the core and within finer-grained material.

The attached Table 1 summarizes the boring locations, samples collected for laboratory analysis at each boring location, and the results of the field screening process. In addition, two blind duplicate samples were collected for quality control purposes, and the locations are noted in the table.

Of note, at the time of the focused investigation, the depth to groundwater at wells OB-17 and OB-22 were checked. The groundwater elevation at OB-17 was 485.15', consistent with recent

mapping (i.e., the annual sampling event at which time the elevation was 485.7'). The groundwater elevation at OB-22 was at approximately elevation 505', or approximately 8 feet higher than recent mapping (i.e., the August 2016 annual sampling event). Therefore, within the area of the focused investigation the groundwater table was encountered at a higher elevation (i.e. at a shallower depth below ground surface) than indicated based on prior depth to overburden groundwater data, likely as a result of antecedent rainfall and ongoing snow melt. While the approved Work Plan included the collection of only one sample below the groundwater table, as a precautionary measure to account for the more typical depth to groundwater and the apparent water table fluctuation, at 12 of the 14 boring locations, more than one sample was collected in the saturated zone below the water table, and up to depths of approximately 25 feet, consistent with the intent of the approved work plan.

As noted above, paint waste was not observed at any of the boring locations. Since small, visible remnants of paint waste (i.e., fragments) are present on the surface within the OCDA, and at the request of the USEPA, two paint waste samples were collected for laboratory analysis of 1,4-dioxane along with the soil samples collected in the focused investigation.

Laboratory Analysis

Each soil sample collected for analysis was labeled as B-2016-(boring location)-(sample interval). The samples were shipped on ice, under chain of custody to Alpha Analytical for analysis for 1,4-dioxane via USEPA Method 8270 SIM with isotope dilution. The Alpha Analytical laboratory reports, which include the chain of custody records, and the Cadena data validation reports are enclosed as Attachments B and C, respectively. As shown, the analytical result for each of the soil samples was validated without qualification.

In addition, the two paint waste samples were designated PW-1 and PW-2. In a conversation with the laboratory, instructions were provided to collect the portion of the paint waste samples for analysis from the interior of each paint waste sample so that the portion that would have been the least subject to weathering was targeted for analysis.

Results

As shown in the Boring Logs provided as Attachment A, the soils encountered within the former paint waste removal area within the OCDA were indicative of the imported fill used to backfill the former paint waste removal area. The predominant soil type is a brown/tan sand. Typically at depth, mine tailings were also encountered and are characterized as gray, dark gray, or black fine to coarse-grained material, as described on the boring logs. Encountering mine tailings is indicative that the sample intervals were extended to points below the prior excavation in the area of investigation, as was intended in the approved work plan, and accomplished by collecting more than one sample (only one sample was planned per the approved work plan) below the water table.

As shown in Table 1, of the soil samples collected, PID readings were measured in three samples all at the boring B-2016-3 location. Each of the samples that exhibited a PID reading was submitted for laboratory analysis of 1,4-dioxane. As also noted on Table 1, the sample from the 14'-14.5' depth interval at this location also had a petroleum-like odor, which is the only sample that exhibited a noticeable odor.

Finally, as also shown in Table 1, of the 41 soil samples collected, three exhibited faint discoloration, although, based on review of historic reports and field observation of the characteristics of the paint waste during investigation activities, not indicative of paint waste. These samples were encountered at boring locations B-2016-6, B-2016-7, and B-2016-11. Each of these samples were also submitted for laboratory analysis for 1,4-dioxane.

Review of the Alpha Analytical reports indicates that 1,4-dioxane was not detected (ND) in any of the 41 soil samples nor in the two paint waste samples collected. All results are therefore ND at a typical method detection limit of approximately 4.0 ug/kg.

Please contact us if you have questions or comments on the content of this report.

Sincerely,

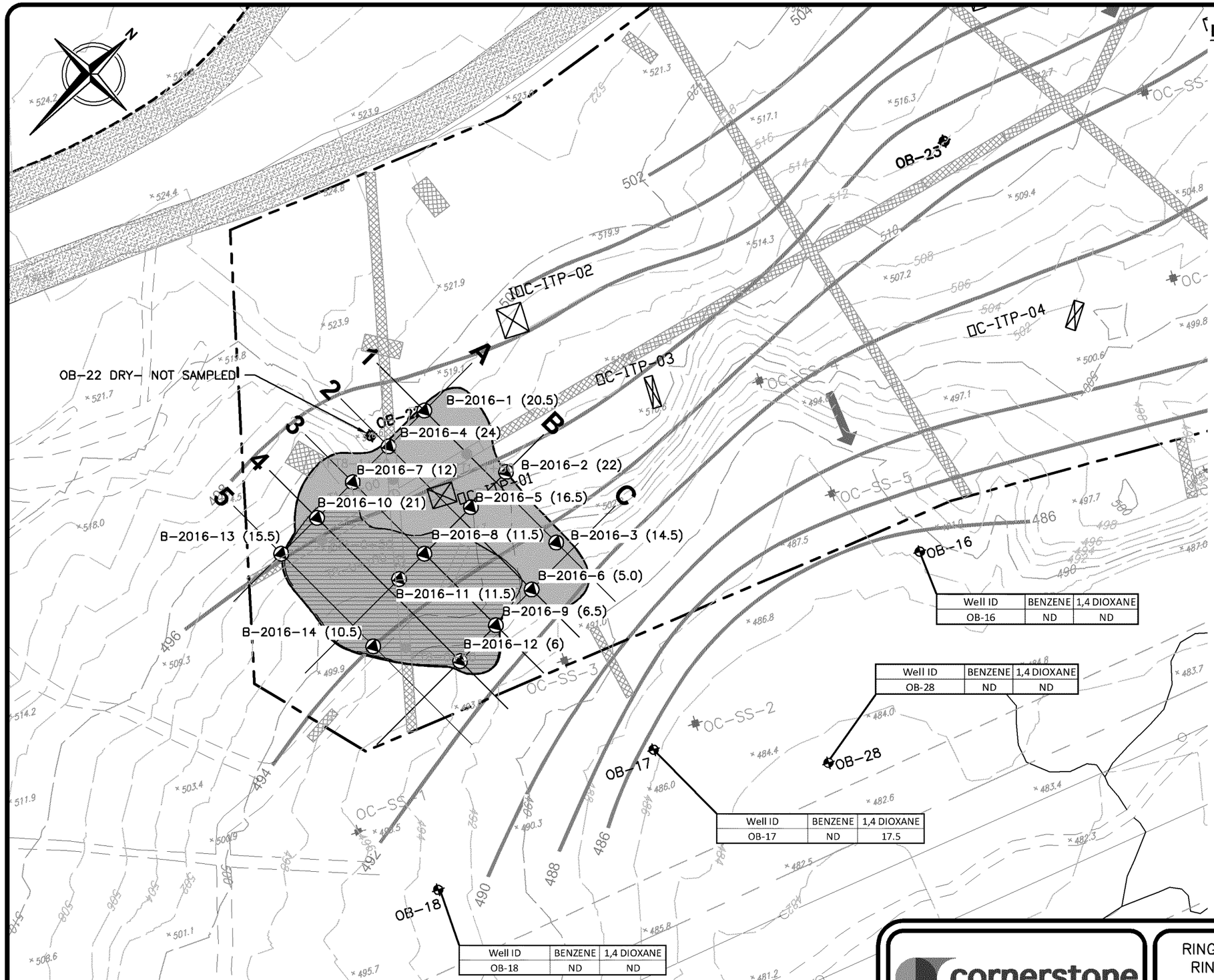
CORNERSTONE ENGINEERING GROUP, LLC

Gary J. DiPippo, Professional Engineer.
NJ Lic. # 24GE02646100

Timothy R. Roeper, PG
Client Manager, Hydrogeology

Figure 1: OCDA Sample Locations, December 2016
Table 1: OCDA Soil Sample Summery Table
Attachment A: Boring Logs
Attachment B: Alpha Analytical Laboratory Reports
Attachment C: Cadena Validation Reports

cc: B. Bussa, Ford
T. Green, Ford OGC.
J. Lagrotteria, LeClairRyan
D. Laguzza, LeClairRyan
K. Petrone, NJDEP
L. Dodge, Excel
R. Harwood, Excel
W. Monahan
C. Coslett, de maximis



Well ID	BENZENE	1,4 DIOXANE
OB-16	ND	ND

Well ID	BENZENE	1,4 DIOXANE
OB-28	ND	ND

Well ID	BENZENE	1,4 DIOXANE
OB-17	ND	17.5

Well ID	BENZENE	1,4 DIOXANE
OB-18	ND	ND

LEGEND:

- 530 — EXISTING CONTOUR
- 514 — GROUNDWATER CONTOUR LINE RELATIVE TO MEAN SEA LEVEL (AUG. 2016)
- GROUNDWATER FLOW DIRECTION
- LIMIT OF SURFACE WATER
- OVERHEAD UTILITY LINES
- PROPERTY BOUNDARY
- OUTLINE OF O'CONNOR DISPOSAL AREA
- EXISTING DIRT ROAD/TRAIL
- OB–16 — OVERBURDEN MONITORING WELL LOCATION
- OCDA — O'CONNOR DISPOSAL AREA
- APPROXIMATE LIMITS OF REMOVAL AREAS – SOIL, PAINT SLUDGE, AND DRUM REMNANTS
- APPROXIMATE LIMITS OF HISTORIC SLUDGE REMOVAL
- STREAM
- B–2016–5 — SOIL SAMPLE LOCATION
- B–2016–5 (22) — MAXIMUM SAMPLE DEPTH
- A / 1 — WORKPLAN SAMPLING GRID

NOTE:
REMOVAL AREAS AS SHOWN IN THE DOCUMENT REMEDIAL INVESTIGATION REPORT FOR O'CONNOR DISPOSAL AREA (ARCADIS JUNE 2013)

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RINGWOOD MINES/LANDFILL SUPERFUND SITE
RINGWOOD, PASSAIC COUNTY, NEW JERSEY

OCDA SOIL SAMPLE LOCATIONS
DECEMBER 2016

FIGURE NO. 1

PROJECT NO. 140802

Table 1
OCDA Soil Sample Summary Table
1,4-dioxane Testing in Former Paint Waste Removal Area
December 2016

Boring ID	Sample Interval	Above/Below Water Table	PID Reading (ppm) Y/N -result	Coloration or Odor detected	1,4-Dioxane Result*
B-2016-1	5.0 - 5.5	Above	N	NO	ND (<4.25)
	9.0 - 9.5	Below	N	NO	ND (<4.28)
	13.5 - 14.0	Below	N	NO	ND (<4.36)
	20.0 - 20.5 (DUP)	Below	N	NO	ND (<4.08)/ND (<3.80)
B-2016-2	4.5 - 5.0	Above	N	NO	ND (<3.81)
	11.0 - 11.5	Below	N	NO	ND (<3.95)
	16.5 - 17.0	Below	N	NO	ND (<3.89)
	21.5 - 22	Below	N	NO	ND (<4.90)
B-2016-3	5.5 - 6.0	Above	Y - 7 ppm	NO	ND (<4.32)
	9.5 - 10.0	Below	Y - 14 - 44 ppm	NO	ND (<4.41)
	14.0 - 14.5	Below	Y - 0 - 1 ppm	sweet, petroleum-like odor noted	ND (<4.98)
B-2016-4	8.5 - 9.0	Above	N	NO	ND (<4.10)
	11.0 - 11.5	Below	N	NO	ND (<4.31)
	15.0 - 15.5	Below	N	NO	ND (<4.40)
	20.0 - 20.5	Below	N	NO	ND (<4.09)
	23.5 - 24.0	Below	N	NO	ND (<4.09)
B-2016-5	0.5 - 1.0	Above	N	NO	ND (<4.22)
	11.0 - 11.5	Below	N	NO	ND (<4.05)
	15.0 - 15.5	Below	N	NO	ND (<4.15)
B-2016-6	1.5 - 2.0	Above	N	NO	ND (<4.07)
	4.5 - 5.0	Below	N	purple/blue color noted, not paint waste	ND (<4.04)
B-2016-7	9.0 -9.5	Below	N	discoloration noted, not paint waste	ND (<3.92)
	11.5 - 12	Below	N	NO	ND (<4.78)
B-2016-8	4.5 - 5.0	Below	N	NO	ND (<4.16)
	9.0 - 9.5	Below	N	NO	ND (<4.00)
	11.0 - 11.5	Below	N	NO	ND (<4.41)
B-2016-9	2.0 - 2.5 (DUP)	Above	N	NO	ND (<3.88)/ND (<3.89)
	6.0 - 6.5	Below	N	NO	ND (<4.00)
B-2016-10	4.0 - 4.5	Above	N	NO	ND (<3.97)
	9.0 - 9.5	Below	N	NO	ND (<4.11)
	11.5 - 12	Below	N	NO	ND (<4.44)
	20.5 - 21.0	Below	N	NO	ND (<4.34)
B-2016-11	5.0 - 5.5	Below	N	NO	ND (<4.53)
	11.0 - 11.5	Below	N	purple coloration noted, not paint waste	ND (<4.12)
B-2016-12	4.0 -4.5	Below	N	NO	ND (<4.36)
	5.5 - 6.0	Below	N	NO	ND (<4.41)
B-2016-13	5.0 - 5.5	Above	N	NO	ND (<3.93)
	10.0 - 10.5	Below	N	NO	ND (<4.17)
	15.0 - 15.5	Below	N	NO	ND (<4.03)
B-2016-14	4.0 - 4.5	Below	N	NO	ND (<4.12)
	10.0 - 10.5	Below	N	NO	ND (<4.00)

*ND (<3.80) = Non-Detect, Method Detection Limit in ug/kg shown in parentheses

ATTACHMENT A – BORING LOGS

B-2016-1
B-2016-1
B-2016-2
B-2016-3
B-2016-4
B-2016-5
B-2016-6
B-2016-7
B-2016-8
B-2016-9
B-2016-10
B-2016-11
B-2016-12
B-2016-13
B-2016-14

Client

Project

Boring ID

Location

Cornerstone Engineering Group, LLC
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environmental

Evelation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-1
Drilled by	Ford Motor Company	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/13/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/14/16
Drilling Method	John Giuliano Fraste		24.00 3
Sample Method	Sonic	USCS	
Notes:	Sonic		

Northing	
Easting	140802-018
Surface Elev. (ft)	841240.000
	556120.000
DTW (ft. bgs)	515.00
Horizontal Datum	9.00
Vertical Datum	

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0	515			N/A	No Recovery GROUND SURFACE	
5	510		B-2016-1-(5-5.5)	SM	Orange, Tan m SAND, little Silt, little mf Gravel	
				N/A	No Recovery	
			B-2016-1-(9-9.5)	GM	SILT, some mf Sand, some cmf Gravel, Wet	
	505	0		SM	Tan mf Sand, some Silt, Damp	
10				SM	Dark Gray SILT/Mine Tailings, some f Sand, Saturated	
			B-2016-1-(13.5-14)	SW	Brown/Orange cmf SAND, little f Gravel, Damp	
	500	0				
15				SM	Gray SILT/Mine Tailings, some Tan f Sand, little mf gravel, Damp	
		0				

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Client: Ford Motor Company | Boring ID: B-2016-1

Project: Ford Motor Company | Location: Dearborn, MI | Project No.: 2016-018

Cornerstone Engineering Group, LLC

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DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
		0	B-2016-1-(20-20.5)	SM	Gray SILT/Mine Tailings, some Tan f Sand, little mf gravel, Damp	
				SM	Brown f SAND, trace Gray Silt/Mine Tailings, little f Gravel, Slightly Moist	
25		0				
	490					
30	485					
	480					
35						
	475					
40						
	70					
45						

Client

Project

Boring ID

Location

Cornerstone Engineering Group, LLC
cornerstone
environmental

Evelation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-2
Drilled by	Ford Motor Company	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/13/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/14/16
Drilling Method	John Giuliano		24.00
	Fraste	USCS	3
Sample Method	Sonic		
Notes:	Sonic		

Northing	
Easting	140802-018
Surface Elev. (ft)	841240.000
	556180.000
DTW (ft. bgs)	513.00
Horizontal Datum	10.50
Vertical Datum	

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0				N/A	No Recovery GROUND SURFACE	
	510			GP	Black cmf GRAVEL	
5		0	B-2016-2-(4.5-5)	SP	Brown mf SAND and Black cm SAND, little cmf Gravel	
				N/A	No Recovery	
	505					
		0		SP	Brown cm SAND, little cmf Gravel	
				SM	Light Brown mf SAND, some Silt, Damp	
10			B-2016-2-(11-11.5)	N/A	No Recovery	
	500					
			B-2016-2-(16.5-17)	SM	Light Brown mf SAND, little Gray Silt/Mine Tailings	
	495			SP	cmf SAND, little mf Gravel	
15				ML	Brown SILT, Saturated	
		0				
20						

Client

Project

Boring ID

Location

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USCS

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
			Ford Motor Company		B-2016-2	
			Ford Motor Company		Project No. 2016-018	
		0		ML	Brown SILT, Saturated	
			B-2016-2-(21.5-22)			
25		490		SM	Tan mf SAND, some Gray Silt/Mine Tailings, little mf Gravel, Damp	
		0				
	485					
30						
	480					
35						
	475					
40	470					
45						

Client

Project

Boring ID

Location

Cornerstone Engineering Group, LLC
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environmental

Evelation estimated based on OB-22

Drilling Contractor	Ford Motor Company	Start Date	B-2016-3
Drilled by	Ford Motor Company	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/14/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/14/16
Drilling Method	John Giuliano		16.00
	Fraste	USCS	3
Sample Method	Sonic		
Notes:	Sonic		

Drilling

Northing	
Easting	140802-018
Surface Elev. (ft)	841240.000
	556240.000
DTW (ft. bgs)	510.00
Horizontal Datum	9.00
Vertical Datum	

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0	510			N/A	No Recovery — GROUND SURFACE	
5	505	5		GM	mf GRAVEL, some mf Sand	
				SP	Orange/Brown m SAND, little mf Black Gravel, Woody Debris	
		7	B-2016-3-(5.5-6	N/A	No Recovery	
		14		SM	mf SAND, some Black Silt, Moist	
	500		B-2016-3-(9.5-10)	SP	Light Brown /Tan f SAND, little f Gravel, Slightly Moist	
10		44				
		33		ML	SILT, sweet petroleum like odor noticed, Saturated	
		1				
			B-2016-3-(14-14.5)			
	495	0		SW	Medium Brown mf SAND, Saturated	
				GP	fm GRAVEL, some Light Gray Silt, Moist	
15						
20						

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Client **Boring ID**

Project **Location**

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Evelation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-4
Drilled by	OCDA Sampling	Completion Date	Ringwood, NJ
Logged by	Summit	Borehole Depth (ft bgs)	12/13/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/13/16
Drilling Method	John Giuliano Fraste		30.00 3
Sample Method	Sonic		

Northing	
Easting	140802-018
Surface Elev. (ft)	841210.000
	556120.000
DTW (ft. bgs)	515.00
Horizontal Datum	9.50
Vertical Datum	

Notes:

USCS

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0	515	0		ML	GROUND SURFACE SILT, some Grass and Roots, mf Gravel, Damp	
				N/A	No Recovery	
5	510			GC	CLAY, some mf Gravel, Damp	
			B-2016-4-(8.5-9)	PT	Woody Organic Debris, Damp	
	505	0		GM	Gray SILT/Mine Tailings, little f Gravel, Damp	
10			B-2016-4-(11-11.5)	GP	mf GRAVEL	
				CL	Dark Gray Silt with brown streaks/Mine Tailings, Damp	
				ML GM	Brown and Dark Gray SILT/Mine Tailings Brown SILT, some Clay, little f gravel	
	500	0	B-2016-4-(15-15.5)	SM	mf SAND, some Silt, little f Gravel	
15				ML	Brown and Gray SILT/Mine Tailings	
				GM	Brown SILT, some f Gravel	
		0				

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USCS

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
			Ford Motor Company		B-2016-4	
			OCDA Sampling		Project No. 2016-018	
		0	B-2016-4-(20-20.5)	GM	Brown SILT, some f Gravel	
				SM	Brown SILT, Gray Clay, mf Sand, Damp	
25			B-2016-4-(23.5-24)	SM	Brown SILT, some mf Sand, Wet	
	490	0		ML	Dark Gray SILT/Mine Tailings, Damp	
30	485	0				
	480					
35						
	475					
40						
	70					
45						

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Location

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Evelation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-5
Drilled by	Ford Motor Company	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/14/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/14/16
Drilling Method	John Giuliano		18.00
	Fraste	USCS	3
Sample Method	Sonic		
Notes:	Sonic		

Northing	
Easting	140802-018
Surface Elev. (ft)	841210.000
	556180.000
DTW (ft. bgs)	512.00
Horizontal Datum	11.00
Vertical Datum	

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0					GROUND SURFACE	
				SP	Brown and Tan mf SAND, little roots, little cmf Gravel, trace Silt, Moist	
			B-2016-5-(0.5-1)	N/A	No Recovery	
	510					
5						
	505					
		0		GP	Black cmf GRAVEL	
10			B-2016-5-(11-11.5)	GM	Tan, Orange, Brown mf SAND, some mf Gravel, trace Silt, Slightly Moist	
	10			SP	cm SAND, some cmf Gravel, Slightly Moist	
				GM	SILT/Mine Tailings, some f Sand, Black mf Gravel	
		0	B-2016-5-(15-15.5)			
	495					
15				SC	Gray SILT/Mine Tailings, White and Tan Sand	
		0				

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Evelation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-6
Drilled by	Ford Motor Company	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/15/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/15/16
Drilling Method	John Giuliano Fraste		5.00 3
Sample Method	Sonic		
Notes:	Sonic		

Northing		
Easting	140802-018	
Surface Elev. (ft)	841210.000	556240.000
DTW (ft. bgs)	505.00	
Horizontal Datum	3.00	
Vertical Datum		

USCS

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0	505			SM	GROUND SURFACE cmf SAND, little roots, trace of Silt, Saturated	
		0	B-2016-6-(1.5-2)	SP	Tan cm SAND, little f Gravel, Damp purple/blue coloration noted, uncharacteristic of paint sludge	
5	500	0	B-2016-6-(4.5-5)			
	495					
10						
	490					
15						
20						

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Evelation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-7
Drilled by	Ford Motor Company	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/15/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/15/16
Drilling Method	John Giuliano Fraste		12.00 3
Sample Method	Sonic	USCS	
Notes:	Sonic		

Northing	
Easting	140802-018
Surface Elev. (ft)	841180.000
DTW (ft. bgs)	556120.000
Horizontal Datum	508.00
Vertical Datum	5.00

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0					GROUND SURFACE	
				SM	mf SAND, little Silt, little cmf Gravel, Damp	
				N/A	No Recovery	
	505					
		0		SW	Brown mf SAND, Saturated	
	500			SM	Brown f SAND, some Silt, mf Gravel, Damp, discoloration noticed in soil around 9', not paint waste	
		0	B-2016-7-(9-9.5)			
				SW	Brown mf SAND, Saturated	
10				SP	Tan/Brown mf SAND, some mf Gravel	
		0	B-2016-7-(11.5-12)			
	495					
15	490					

Client

Project

Boring ID

Location

Cornerstone Engineering Group, LLC
cornerstone
environmental

Evelation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-8
Drilled by	Ford Motor Company	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/15/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/15/16
Drilling Method	John Giuliano Fraste		12.00 3
Sample Method	Sonic	USCS	
Notes:	Sonic		

Northing	
Easting	140802-018
Surface Elev. (ft)	841180.000
	556180.000
DTW (ft. bgs)	506.00
Horizontal Datum	3.00
Vertical Datum	

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0					GROUND SURFACE	
	505			SP	Brown mf SAND, Damp	
		0		GP	f GRAVEL	
				GM	Dark SILT/Mine Tailings, some f Gravel, Wet	
5			B-2016-8-(4.5-5)			
		0		SM	Dark SILT/Mine Tailings, trace Brown mf Sand	
	500			SM	SILT, some Brown mf Sand, little mf Gravel	
		0				
			B-2016-8-(9-9.5)			
	495					
10			B-2016-9-(11-11.5)	SM	f SAND, little Silt, little f Gravel, Damp	
		0				
	490					
15						
20						

Client

Project

Boring ID

Location

Cornerstone Engineering Group, LLC
cornerstone
environmental

Evelation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-9
Drilled by	Ford Motor Company	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/15/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/15/16
Drilling Method	John Giuliano Fraste		8.00 3
Sample Method	Sonic		
Notes:	Sonic		

Northing	
Easting	140802-018
Surface Elev. (ft)	841180.000
	556240.000
DTW (ft. bgs)	504.00
Horizontal Datum	4.00
Vertical Datum	

USCS

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0					GROUND SURFACE	
				SP	Brown mf SAND, cmf Gravel	
				SW	Brown/Orange cmf SAND, little White Sand	
		0	B-2016-9-(2-2.5)			
	500			GP	mf GRAVEL	
5				SP	Brown m SAND, little mf Gravel, Damp	
		0	B-2016-9-(6-6.5)	SM	Brown m SAND, little Silt, little mf Gravel, Damp	
				GP	mf GRAVEL	
		0		SP	Dense Brown, Orange, Tan m SAND, little f Gravel, trace Silt	
	495					
10						
	490					
15						
	55					
20						

Client

Project

Boring ID

Location

Cornerstone Engineering Group, LLC
cornerstone
environmental

Evelation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-10
Drilled by	Ford Motor Company	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/14/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/14/16
Drilling Method	John Giuliano Fraste		23.00 3
Sample Method	Sonic		
Notes:	Sonic		

Northing	
Easting	140802-018
Surface Elev. (ft)	841150.000
	556120.000
DTW (ft. bgs)	510.00
Horizontal Datum	6.00
Vertical Datum	

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0	510				GROUND SURFACE	
				SM	m SAND, some Silt, little roots, Damp	
				SM	Dark Brown f SAND, some Silt	
				SP	Light Brown/Orange mf SAND, some Gray Silt, little mf Gravel	
5	505	0	B-2016-10-(4-4.5)	SM	Brown f SAND, Silt, Wet	
				GM	SILT, little mf Gravel, trace of Sand, Slightly Damp	
	500	0	B-2016-10-(9-9.5)	ML	Gray SILT/Mine Tailings, Moist	
10			B-2016-10-(11.5-12)	SM	mf SAND, Gray Silt	
				GM	SILT, little mf Gravel, trace f Sand	
	495	0		GM	Brown SILT, little mf Gravel	
15				ML	Gray SILT/Mine Tailings, trace f sand, Damp	
	10	0				

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20

Client

Project

Boring ID

Location

Cornerstone Engineering Group, LLC
cornerstone
environmental

USCS

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
			Ford Motor Company		B-2016-10	
			Ford Motor Company		Project No. 2016-018	
		0	B-2016-10-(20.5-21)	ML	Gray SILT/Mine Tailings, trace f sand, Damp	
				GP	mf GRAVEL	
25				ML	Gray SILT/Mine Tailings	
	485					
30	480					
	475					
35						
	470					
40						
45						

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Client

Project

Boring ID

Location

Cornerstone Engineering Group, LLC
cornerstone
environmental

Evelation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-11
Drilled by	Ford Motor Company	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/15/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/15/16
Drilling Method	John Giuliano Fraste		12.00 3
Sample Method	Sonic		
Notes:	Sonic		

Northing	
Easting	140802-018
Surface Elev. (ft)	841150.000
DTW (ft. bgs)	556180.000
Horizontal Datum	507.00
Vertical Datum	4.00

USCS

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE	SOIL / ROCK DESCRIPTION	REMARKS
0	505			N/A	No Recovery GROUND SURFACE	
5		0		SP	Dark Brown cmf SAND, little pebbles, roots, Wet	
			B-2016-11-(5-5.5)	SP	Orange/Brown/White mf SAND, little Black mf Gravel, Damp	
	500	0		N/A	No Recovery	
				SP	Light Brown f SAND, some Silt, little f Gravel. Faint Purple coloration noted around 11', not paint waste	
10	495	0	B-2016-11-(11-11.5)			
		0				
		0				
	490					
15						

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20

Client

Project

Boring ID

Location

Cornerstone Engineering Group, LLC
cornerstone
environmental

Elevation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-12
Drilled by	Ringwood	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/15/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/15/16
Drilling Method	John Giuliano		6.00
	Fraste		3
Sample Method	Sonic		4.00
Notes:	Sonic		

Northing	
Easting	140802-018
Surface Elev. (ft)	841150.000
	556240.000
DTW (ft. bgs)	505.00
Horizontal Datum	
Vertical Datum	

DEPTH	(ELEV.)	PID (ppm)	LAB SAMPLE	USCS SOIL TYPE		SOIL / ROCK DESCRIPTION	REMARKS
0	505				N/A	No Recovery GROUND SURFACE	
		0	B-2016-6-(4-4.5)		SM	Brown m SAND, little Brown Silt	
5	500	0			SP	Orange/Brown with bands of White mf SAND, little mf Gravel	
		0	B-2016-6-(5.5-6)				
	495						
10							
	490						
15							

Client

Project

Boring ID

Location

Cornerstone Engineering Group, LLC
cornerstone
environmental

Evelation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-13
Drilled by	Ford Motor Company	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/14/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	12/14/16
Drilling Method	John Giuliano		18.00
	B-2016Fraste	USCS	3
Sample Method	Sonic		
Notes:	Sonic		

Northing	
Easting	140802-018
Surface Elev. (ft)	841120.000
	556120.000
DTW (ft. bgs)	511.00
Horizontal Datum	6.00
Vertical Datum	

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE		SOIL / ROCK DESCRIPTION	REMARKS
0					N/A	No Recovery GROUND SURFACE	
	510						
5		0	B-2016-13-(5-5.5)		SM	Brown mf SAND, some Silt, f Gravel, Damp	
	505				SP	f SAND, some Silt, little f Gravel, Wet	
					GP	f GRAVEL	
			B-2016-13-(10-10.5)		SM	Brown and Gray f SAND, some Silt, Wet	
	500	0			GP	f Gravel	
10					MH	SILT/Mine Tailings, Wet	
		0			SM	f SAND, some Silt/Mine Tailings, little f Gravel	
			B-2016-13-(15-15.5)				
	495				GP	fm GRAVEL	
15							
20							

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Client | **Boring ID**

Project | **Location**

Cornerstone Engineering Group, LLC
cornerstone environmental

Evelation estimated based on OB-22

Drilling

Drilling Contractor	Ford Motor Company	Start Date	B-2016-14
Drilled by	Ford Motor Company	Completion Date	Ringwood, NJ
Logged by	Summit Drilling	Borehole Depth (ft bgs)	12/15/16
Drill Rig	Bill Shinn	Borehole Dia. (in)	2/15/16
Drilling Method	John Giuliano Fraste		11.00 3
Sample Method	Sonic		
Notes:	Sonic		

Northing	
Easting	140802-018
Surface Elev. (ft)	841120.000
	556180.000
DTW (ft. bgs)	508.00
Horizontal Datum	4.00
Vertical Datum	

USCS

DEPTH	(ELEV. FT)	PID (ppm)	LAB SAMPLE	SOIL TYPE		SOIL / ROCK DESCRIPTION	REMARKS
0					N/A	No Recovery GROUND SURFACE	
	505						
		0			SP	Light and Medium Brown mf SAND, little f Gravel, Wet	
5			B-2016-14-(4-4.5)		SW	Brown, Tan and White f SAND, Damp	
					SM	Brown mf SAND, little Black f Gravel, trace of Silt/Mine Tailings, Damp	
	500	0			SM	Brown f SAND, little Black f Gravel, trace of Silt/Mine Tailings, Wet	
			B-2016-14-(10-10.5)				
10		0					
	495						
15	490						

ATTACHMENT B – LABORATORY REPORTS

ANALYTICAL REPORT

Lab Number:	L1641090
Client:	Cornerstone/Cadena Co. joint account 1099 Highland Drive, Suite E Ann Arbor, MI 48108
ATTN:	Jim Tomalia
Phone:	(517) 819-0356
Project Name:	FORD-RINGWOOD
Project Number:	140802-018
Report Date:	01/09/17

Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), ME (MA00030), PA (68-02089), VA (460194), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), USFWS (Permit #LE2069641), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1641090-01	B-2016-1-5-5.5	SOIL	RINGWOOD, NJ	12/13/16 14:00	12/16/16
L1641090-02	B-2016-1-9-9.5	SOIL	RINGWOOD, NJ	12/13/16 14:15	12/16/16
L1641090-03	B-2016-1-13.5-14	SOIL	RINGWOOD, NJ	12/13/16 14:30	12/16/16
L1641090-04	B-2016-1-20-20.5	SOIL	RINGWOOD, NJ	12/14/16 09:45	12/16/16
L1641090-05	B-2016-2-4.5-5	SOIL	RINGWOOD, NJ	12/13/16 15:20	12/16/16
L1641090-06	B-2016-2-11-11.5	SOIL	RINGWOOD, NJ	12/13/16 15:35	12/16/16
L1641090-07	B-2016-2-16.5-17	SOIL	RINGWOOD, NJ	12/13/16 16:15	12/16/16
L1641090-08	B-2016-2-21.5-22	SOIL	RINGWOOD, NJ	12/14/16 08:00	12/16/16
L1641090-09	B-2016-3-5.5-6	SOIL	RINGWOOD, NJ	12/14/16 11:05	12/16/16
L1641090-10	B-2016-3-9.5-10	SOIL	RINGWOOD, NJ	12/14/16 11:15	12/16/16
L1641090-11	B-2016-3-14-14.5	SOIL	RINGWOOD, NJ	12/14/16 11:55	12/16/16
L1641090-12	B-2016-4-8.5-9	SOIL	RINGWOOD, NJ	12/13/16 11:20	12/16/16
L1641090-13	B-2016-4-11.0-11.5	SOIL	RINGWOOD, NJ	12/13/16 11:30	12/16/16
L1641090-14	B-2016-4-15-15.5	SOIL	RINGWOOD, NJ	12/13/16 12:00	12/16/16
L1641090-15	B-2016-4-20-20.5	SOIL	RINGWOOD, NJ	12/13/16 12:20	12/16/16
L1641090-16	B-2016-4-23.5-24	SOIL	RINGWOOD, NJ	12/13/16 12:30	12/16/16
L1641090-17	B-2016-5-.5-1	SOIL	RINGWOOD, NJ	12/14/16 10:15	12/16/16
L1641090-18	B-2016-5-11-11.5	SOIL	RINGWOOD, NJ	12/14/16 10:25	12/16/16
L1641090-19	B-2016-5-15-15.5	SOIL	RINGWOOD, NJ	12/14/16 10:45	12/16/16
L1641090-20	B-2016-6-4.5-5	SOIL	RINGWOOD, NJ	12/15/16 10:10	12/16/16
L1641090-21	B-2016-6-1.5-2	SOIL	RINGWOOD, NJ	12/15/16 10:00	12/16/16
L1641090-22	B-2016-7-9-9.5	SOIL	RINGWOOD, NJ	12/15/16 08:40	12/16/16
L1641090-23	B-2016-7-11.5-12	SOIL	RINGWOOD, NJ	12/15/16 08:55	12/16/16
L1641090-24	B-2016-8-11-11.5	SOIL	RINGWOOD, NJ	12/15/16 09:45	12/16/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1641090-25	B-2016-8-9-9.5	SOIL	RINGWOOD, NJ	12/15/16 09:35	12/16/16
L1641090-26	B-2016-8-4.5-5	SOIL	RINGWOOD, NJ	12/15/16 09:20	12/16/16
L1641090-27	B-2016-9-6-6.5	SOIL	RINGWOOD, NJ	12/15/16 10:55	12/16/16
L1641090-28	B-2016-9-2-2.5	SOIL	RINGWOOD, NJ	12/15/16 10:40	12/16/16
L1641090-29	B-2016-10-4-4.5	SOIL	RINGWOOD, NJ	12/14/16 14:40	12/16/16
L1641090-30	B-2016-10-9-9.5	SOIL	RINGWOOD, NJ	12/14/16 14:45	12/16/16
L1641090-31	B-2016-10-11.5-12	SOIL	RINGWOOD, NJ	12/14/16 14:50	12/16/16
L1641090-32	B-2016-10-20-21.5	SOIL	RINGWOOD, NJ	12/14/16 15:40	12/16/16
L1641090-33	B-2016-11-5-5.5	SOIL	RINGWOOD, NJ	12/15/16 13:15	12/16/16
L1641090-34	B-2016-11-11-11.5	SOIL	RINGWOOD, NJ	12/15/16 13:30	12/16/16
L1641090-35	B-2016-12-5.5-6	SOIL	RINGWOOD, NJ	12/15/16 11:40	12/16/16
L1641090-36	B-2016-12-4-4.5	SOIL	RINGWOOD, NJ	12/15/16 11:30	12/16/16
L1641090-37	B-2016-13-5-5.5	SOIL	RINGWOOD, NJ	12/14/16 13:15	12/16/16
L1641090-38	B-2016-13-10-10.5	SOIL	RINGWOOD, NJ	12/14/16 14:00	12/16/16
L1641090-39	B-2016-13-15-15.5	SOIL	RINGWOOD, NJ	12/14/16 14:20	12/16/16
L1641090-40	B-2016-14-4-4.5	SOIL	RINGWOOD, NJ	12/15/16 12:45	12/16/16
L1641090-41	B-2016-14-10-10.5	SOIL	RINGWOOD, NJ	12/15/16 13:00	12/16/16
L1641090-42	DUP-1	SOIL	RINGWOOD, NJ	12/14/16 12:00	12/16/16
L1641090-43	DUP-2	SOIL	RINGWOOD, NJ	12/15/16 12:00	12/16/16

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

NJ DEP Data of Known Quality Protocols
Conformance/Non-Conformance
Summary Questionnaire

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the NJDEP Data of Known Quality performance standards?	YES
1a	Were the method specified handling, preservation, and holding time requirements met?	YES
1b	EPH Method: Was the EPH Method conducted without significant modifications (see Section 11.3 of respective DKQ methods)?	N/A
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	YES
3	Were all samples received at an appropriate temperature (4 ± 2° C)?	YES
4	Were all QA/QC performance criteria specified in the NJDEP DKQP standards achieved?	NO
5a	Were reporting limits specified or referenced on the chain-of-custody or communicated to the laboratory prior to sample receipt?	NO
5b	Were these reporting limits met?	N/A
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the DKQP documents and/or site-specific QAPP?	NO
7	Are project-specific matrix spikes and/or laboratory duplicates included in this data set?	NO

Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1a or #1b is "No", the data package does not meet the requirements for "Data of Known Quality".

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: FORD-RINGWOOD **Lab Number:** L1641090
Project Number: 140802-018 **Report Date:** 01/09/17

Case Narrative (continued)

Report Submission

This report replaces the report issued January, 3 2017. Samples L1641090-38 and -39 client ID's have been corrected.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

DKQP Related Narratives

Report Submission

In reference to question 5a:

Reporting limits were not specified.

Semivolatile Organics by SIM

In reference to question 6:

At the client's request, all submitted samples were not analyzed for the full DKQP list of constituents identified in the method specific analyte list presented in the DKQP documents.

In reference to question 4:

Samples L1641090-04, -06, -07, -11, -13, -14, -15, -16, -17, -18, -19, -21, -22, -24, -29, -30, -31, -32, and -37: One or more surrogates failed to meet the DKQP recovery limits. Please refer to the sample results and/or QC section of the report for specific details.

WG963086-1/-2/-3, WG963089-1/-2, WG963107-1/-2 and -3: One or more surrogates failed to meet the DKQP recovery limits. Please refer to the sample results and/or QC section of the report for specific details.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 01/09/17

ORGANICS

SEMIVOLATILES

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-01
Client ID: B-2016-1-5-5.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 03:26
Analyst: SF
Percent Solids: 86%

Date Collected: 12/13/16 14:00
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00849	0.00425	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	104		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-02
Client ID: B-2016-1-9-9.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 04:12
Analyst: SF
Percent Solids: 87%

Date Collected: 12/13/16 14:15
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00857	0.00428	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	100		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-03
Client ID: B-2016-1-13.5-14
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 04:59
Analyst: SF
Percent Solids: 79%

Date Collected: 12/13/16 14:30
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00873	0.00436	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	96		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-04
Client ID: B-2016-1-20-20.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 05:45
Analyst: SF
Percent Solids: 89%

Date Collected: 12/14/16 09:45
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00815	0.00408	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**115**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-05
Client ID: B-2016-2-4.5-5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 06:31
Analyst: SF
Percent Solids: 95%

Date Collected: 12/13/16 15:20
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00762	0.00381	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	107		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-06
Client ID: B-2016-2-11-11.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 07:18
Analyst: SF
Percent Solids: 86%

Date Collected: 12/13/16 15:35
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00789	0.00395	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**113**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-07
Client ID: B-2016-2-16.5-17
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 08:04
Analyst: SF
Percent Solids: 87%

Date Collected: 12/13/16 16:15
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00778	0.00389	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**112**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-08
Client ID: B-2016-2-21.5-22
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 08:50
Analyst: SF
Percent Solids: 76%

Date Collected: 12/14/16 08:00
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00981	0.00490	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	103		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-09
Client ID: B-2016-3-5.5-6
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 09:37
Analyst: SF
Percent Solids: 85%

Date Collected: 12/14/16 11:05
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00865	0.00432	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	100		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-10
Client ID: B-2016-3-9.5-10
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 10:23
Analyst: SF
Percent Solids: 88%

Date Collected: 12/14/16 11:15
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00881	0.00441	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	110		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-11
Client ID: B-2016-3-14-14.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 11:09
Analyst: SF
Percent Solids: 78%

Date Collected: 12/14/16 11:55
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00996	0.00498	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**124**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-12
Client ID: B-2016-4-8.5-9
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 11:55
Analyst: SF
Percent Solids: 83%

Date Collected: 12/13/16 11:20
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00819	0.00410	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	105		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-13
Client ID: B-2016-4-11.0-11.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 14:09
Analyst: SF
Percent Solids: 89%

Date Collected: 12/13/16 11:30
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00863	0.00431	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**126**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-14
Client ID: B-2016-4-15-15.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 14:55
Analyst: SF
Percent Solids: 88%

Date Collected: 12/13/16 12:00
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00881	0.00440	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**129**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-15
Client ID: B-2016-4-20-20.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 15:42
Analyst: SF
Percent Solids: 89%

Date Collected: 12/13/16 12:20
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00819	0.00409	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**137**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-16
Client ID: B-2016-4-23.5-24
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/30/16 16:28
Analyst: SF
Percent Solids: 84%

Date Collected: 12/13/16 12:30
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00817	0.00409	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**125**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-17
Client ID: B-2016-5-.5-1
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 04:13
Analyst: WR
Percent Solids: 85%

Date Collected: 12/14/16 10:15
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00844	0.00422	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**137**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-18
Client ID: B-2016-5-11-11.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 04:59
Analyst: WR
Percent Solids: 88%

Date Collected: 12/14/16 10:25
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00809	0.00405	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**113**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-19
Client ID: B-2016-5-15-15.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 05:45
Analyst: WR
Percent Solids: 89%

Date Collected: 12/14/16 10:45
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00831	0.00415	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**113**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-20
Client ID: B-2016-6-4.5-5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 06:31
Analyst: WR
Percent Solids: 90%

Date Collected: 12/15/16 10:10
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00808	0.00404	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	109		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-21
Client ID: B-2016-6-1.5-2
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 07:17
Analyst: WR
Percent Solids: 86%

Date Collected: 12/15/16 10:00
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00814	0.00407	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**113**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-22
Client ID: B-2016-7-9-9.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 08:03
Analyst: WR
Percent Solids: 91%

Date Collected: 12/15/16 08:40
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00785	0.00392	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**112**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-23
Client ID: B-2016-7-11.5-12
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 08:49
Analyst: WR
Percent Solids: 76%

Date Collected: 12/15/16 08:55
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00957	0.00478	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	108		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-24
Client ID: B-2016-8-11-11.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 09:35
Analyst: WR
Percent Solids: 89%

Date Collected: 12/15/16 09:45
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00883	0.00441	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**118**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-25
Client ID: B-2016-8-9-9.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 10:21
Analyst: WR
Percent Solids: 91%

Date Collected: 12/15/16 09:35
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00801	0.00400	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	104		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-26
Client ID: B-2016-8-4.5-5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 12:34
Analyst: WR
Percent Solids: 89%

Date Collected: 12/15/16 09:20
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00832	0.00416	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	105		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-27
Client ID: B-2016-9-6-6.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 13:21
Analyst: WR
Percent Solids: 92%

Date Collected: 12/15/16 10:55
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00800	0.00400	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	102		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-28
Client ID: B-2016-9-2-2.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 14:07
Analyst: WR
Percent Solids: 90%

Date Collected: 12/15/16 10:40
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00775	0.00388	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	107		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-29
Client ID: B-2016-10-4-4.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 14:53
Analyst: WR
Percent Solids: 90%

Date Collected: 12/14/16 14:40
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00793	0.00397	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**111**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-30
Client ID: B-2016-10-9-9.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 15:40
Analyst: WR
Percent Solids: 91%

Date Collected: 12/14/16 14:45
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00822	0.00411	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**113**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-31
Client ID: B-2016-10-11.5-12
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 16:26
Analyst: WR
Percent Solids: 89%

Date Collected: 12/14/16 14:50
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00887	0.00444	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**113**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-32
Client ID: B-2016-10-20-21.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 17:12
Analyst: WR
Percent Solids: 89%

Date Collected: 12/14/16 15:40
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00868	0.00434	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**116**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-33
Client ID: B-2016-11-5-5.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 17:58
Analyst: WR
Percent Solids: 88%

Date Collected: 12/15/16 13:15
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00906	0.00453	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	106		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-34
Client ID: B-2016-11-11-11.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 18:44
Analyst: WR
Percent Solids: 91%

Date Collected: 12/15/16 13:30
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00825	0.00412	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	96		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-35
Client ID: B-2016-12-5.5-6
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 19:31
Analyst: WR
Percent Solids: 89%

Date Collected: 12/15/16 11:40
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00881	0.00441	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	110		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-36
Client ID: B-2016-12-4-4.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 20:17
Analyst: WR
Percent Solids: 81%

Date Collected: 12/15/16 11:30
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00873	0.00436	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	110		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-37
Client ID: B-2016-13-5-5.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/25/16 00:47
Analyst: WR
Percent Solids: 86%

Date Collected: 12/14/16 13:15
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00787	0.00393	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**112**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-38
Client ID: B-2016-13-10-10.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/25/16 01:33
Analyst: WR
Percent Solids: 83%

Date Collected: 12/14/16 14:00
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00835	0.00417	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	98		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-39
Client ID: B-2016-13-15-15.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/25/16 02:19
Analyst: WR
Percent Solids: 91%

Date Collected: 12/14/16 14:20
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00805	0.00403	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	106		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-40
Client ID: B-2016-14-4-4.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/25/16 03:05
Analyst: WR
Percent Solids: 85%

Date Collected: 12/15/16 12:45
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00825	0.00412	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	97		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-41
Client ID: B-2016-14-10-10.5
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/25/16 03:51
Analyst: WR
Percent Solids: 89%

Date Collected: 12/15/16 13:00
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00800	0.00400	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	96		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-42
Client ID: DUP-1
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/25/16 04:37
Analyst: WR
Percent Solids: 90%

Date Collected: 12/14/16 12:00
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00760	0.00380	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	105		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018
Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-43
Client ID: DUP-2
Sample Location: RINGWOOD, NJ
Matrix: Soil
Analytical Method: 1,8270D-SIM
Analytical Date: 12/25/16 05:23
Analyst: WR
Percent Solids: 92%

Date Collected: 12/15/16 12:00
Date Received: 12/16/16
Field Prep: Not Specified
Extraction Method: EPA 3570
Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		mg/kg	0.00778	0.00389	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	107		15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 01:55
Analyst: WR

Extraction Method: EPA 3570
Extraction Date: 12/20/16 21:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 17-36 Batch: WG963086-1					
1,4-Dioxane	ND		mg/kg	0.00800	0.00400

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**121**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 12/24/16 22:29
Analyst: WR

Extraction Method: EPA 3570
Extraction Date: 12/20/16 17:30

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 37-43 Batch: WG963089-1					
1,4-Dioxane	ND		mg/kg	0.00800	0.00400

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**111**	Q	15-110

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 12/29/16 09:49
Analyst: SF

Extraction Method: EPA 3570
Extraction Date: 12/20/16 20:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-16 Batch: WG963107-1					
1,4-Dioxane	ND		mg/kg	0.00800	0.00400

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	**116**	Q	15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 17-36 Batch: WG963086-2 WG963086-3								
1,4-Dioxane	97		103		40-140	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	**133**	Q	**135**	Q	15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 37-43 Batch: WG963089-2 WG963089-3								
1,4-Dioxane	104		105		40-140	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	**112**	Q	100		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 01-16 Batch: WG963107-2 WG963107-3								
1,4-Dioxane	98		101		40-140	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	**120**	Q	**124**	Q	15-110

INORGANICS
&
MISCELLANEOUS

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-01
Client ID: B-2016-1-5-5.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 14:00
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	86.4		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-02
Client ID: B-2016-1-9-9.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 14:15
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	86.6		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-03
Client ID: B-2016-1-13.5-14
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 14:30
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	78.6		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-04
Client ID: B-2016-1-20-20.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 09:45
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	88.7		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-05
Client ID: B-2016-2-4.5-5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 15:20
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	95.1		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-06
Client ID: B-2016-2-11-11.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 15:35
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	85.9		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-07
Client ID: B-2016-2-16.5-17
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 16:15
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	86.6		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-08
Client ID: B-2016-2-21.5-22
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 08:00
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	76.1		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-09
Client ID: B-2016-3-5.5-6
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 11:05
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	85.2		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-10
Client ID: B-2016-3-9.5-10
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 11:15
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	87.8		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-11
Client ID: B-2016-3-14-14.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 11:55
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	77.8		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-12
Client ID: B-2016-4-8.5-9
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 11:20
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	83.2		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-13
Client ID: B-2016-4-11.0-11.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 11:30
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.0		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-14
Client ID: B-2016-4-15-15.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 12:00
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	87.5		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-15
Client ID: B-2016-4-20-20.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 12:20
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.0		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-16
Client ID: B-2016-4-23.5-24
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/13/16 12:30
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	83.8		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-17
Client ID: B-2016-5-.5-1
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 10:15
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	84.9		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-18
Client ID: B-2016-5-11-11.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 10:25
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	88.1		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-19
Client ID: B-2016-5-15-15.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 10:45
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.0		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-20
Client ID: B-2016-6-4.5-5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 10:10
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.0		%	0.100	0.100	1	-	12/22/16 15:03	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-21
Client ID: B-2016-6-1.5-2
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 10:00
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	85.6		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-22
Client ID: B-2016-7-9-9.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 08:40
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	91.0		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-23
Client ID: B-2016-7-11.5-12
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 08:55
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	76.0		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-24
Client ID: B-2016-8-11-11.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 09:45
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.0		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-25
Client ID: B-2016-8-9-9.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 09:35
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.5		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-26
Client ID: B-2016-8-4.5-5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 09:20
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	88.5		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-27
Client ID: B-2016-9-6-6.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 10:55
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	91.6		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-28
Client ID: B-2016-9-2-2.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 10:40
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.2		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-29
Client ID: B-2016-10-4-4.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 14:40
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.7		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-30
Client ID: B-2016-10-9-9.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 14:45
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.8		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-31
Client ID: B-2016-10-11.5-12
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 14:50
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.1		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-32
Client ID: B-2016-10-20-21.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 15:40
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	88.8		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-33
Client ID: B-2016-11-5-5.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 13:15
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	87.6		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-34
Client ID: B-2016-11-11-11.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 13:30
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.8		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-35
Client ID: B-2016-12-5.5-6
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 11:40
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.0		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-36
Client ID: B-2016-12-4-4.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 11:30
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	80.7		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-37
Client ID: B-2016-13-5-5.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 13:15
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	86.0		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-38
Client ID: B-2016-13-10-10.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 14:00
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	83.2		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-39
Client ID: B-2016-13-15-15.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 14:20
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	91.3		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-40
Client ID: B-2016-14-4-4.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 12:45
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	84.8		%	0.100	0.100	1	-	12/22/16 03:02	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-41
Client ID: B-2016-14-10-10.5
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 13:00
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	89.3		%	0.100	0.100	1	-	12/22/16 02:53	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-42
Client ID: DUP-1
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/14/16 12:00
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	90.0		%	0.100	0.100	1	-	12/22/16 02:53	121,2540G	SP

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

SAMPLE RESULTS

Lab ID: L1641090-43
Client ID: DUP-2
Sample Location: RINGWOOD, NJ
Matrix: Soil

Date Collected: 12/15/16 12:00
Date Received: 12/16/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	92.0		%	0.100	0.100	1	-	12/22/16 02:53	121,2540G	SP

Lab Duplicate Analysis
Batch Quality Control

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG963961-1 QC Sample: L1641090-01 Client ID: B-2016-1-5-5.5						
Solids, Total	86.4	88.0	%	2		10
General Chemistry - Mansfield Lab Associated sample(s): 21-40 QC Batch ID: WG963964-1 QC Sample: L1641090-21 Client ID: B-2016-6-1.5-2						
Solids, Total	85.6	87.2	%	2		10
General Chemistry - Mansfield Lab Associated sample(s): 41-43 QC Batch ID: WG963965-1 QC Sample: L1641090-41 Client ID: B-2016-14-10-10.5						
Solids, Total	89.3	89.4	%	0		10

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Sample Receipt and Container Information

Were project specific reporting limits specified? NO

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1641090-01A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-02A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-03A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-04A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-05A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-06A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-07A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-08A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-09A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-10A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-11A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-12A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-13A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-14A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-15A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-16A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-17A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-18A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-19A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-20A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-21A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)

*Values in parentheses indicate holding time in days

Project Name: FORD-RINGWOOD
Project Number: 140802-018

Lab Number: L1641090
Report Date: 01/09/17

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1641090-22A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-23A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-24A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-25A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-26A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-27A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-28A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-29A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-30A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-31A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-32A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-33A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-34A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-35A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-36A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-37A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-38A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-39A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-40A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-41A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-42A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)
L1641090-43A	Glass 120ml/4oz unpreserved	A	N/A	4.1	Y	Absent	A2-NJ-1,4DIOXANE-SIM(14),A2-TS(7)

*Values in parentheses indicate holding time in days

Project Name:	FORD-RINGWOOD	**Lab Number:**	L1641090
Project Number:	140802-018	**Report Date:**	01/09/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORD-RINGWOOD	**Lab Number:**	L1641090
Project Number:	140802-018	**Report Date:**	01/09/17

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORD-RINGWOOD	**Lab Number:**	L1641090
Project Number:	140802-018	**Report Date:**	01/09/17

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: ***EPA 3050B***

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 5

Date Rec'd in Lab 12/17/16

ALPHA Job # L1641090

Client Information
Client: Cornerstone
Address: 100 Crystal Run Rd
Middletown NY, 10941
Phone: 845-695-0252
Fax:
Email: Tim.Roeper@cornerstoneeg.com

Project Information
Project Name: Ford - Ringwood
Project Location: Ringwood, NJ
Project # 140802-018
(Use Project name as Project #) ☐
Project Manager: Tim Roeper
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☒ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☒ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	A2-NJ-8270Sim - PAH	Total Bottle	Sample Specific Comments
41090-01	B-2016-1-5-5.5	12/13/16	14:00	S	JG	X		
-02	B-2016-1-9-9.5	12/13/16	14:15	S	JG	X		
-03	B-2016-1-13.5-14	12/13/16	14:30	S	JG	X		
-04	B-2016-1-20-20.5	12/14/16	9:45	S	JG	X		
-05	B-2016-2-4.5-5	12/13/16	15:20	S	JG	X		
-06	B-2016-2-11-11.5	12/13/16	15:35	S	JG	X		
-07	B-2016-2-16.5-17	12/13/16	16:15	S	JG	X		
-08	B-2016-2-21.5-22	12/14/16	8:00	S	JG	X		
-09	B-2016-3-5.5-6	12/14/16	11:05	S	JG	X		
-10	B-2016-3-9.5-10	12/14/16	11:15	S	JG	X		

Container Type: A
Preservative: A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	12/16/16 13:30		12/16/16 13:30
	12/16/16 16:17		12-16-16 1800
	12-16-16 2250		12/16/16 2250
	12/17/16 02:35		12/17/16 02:35

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 5

Date Rec'd in Lab 12/17/16

ALPHA Job # L1641090

Client Information

Client: Cornerstone
Address: 100 Crystal Run Rd
Middletown, NY 10941
Phone: 845-695-0252
Fax:
Email: Tim.Roeper@cornerstonegi.com

Project Information

Project Name: Ford-Ringwood
Project Location: Ringwood, NJ
Project # 140802-018
(Use Project name as Project #) ☐
Project Manager: Tim Roeper
ALPHAQuote #:

Turn-Around Time

Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☒ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☒ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

AZ-NJ-SVOC-8270
AZ-NJ-PAH-8270SIM

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials
41090 -11	B-2016-3-14-14.5	12/14/16	11:55	S	JG
-17	B-2016-4-8.5-9	12/13/16	11:20	S	JG
-13	B-2016-4-11.0-11.5	12/13/16	11:30	S	JG
-14	B-2016-4-15-15.5	12/13/16	12:00	S	JG
-15	B-2016-4-20-20.5	12/13/16	12:20	S	JG
-16	B-2016-4-23.5-24	12/13/16	12:30	S	JG
-17	B-2016-5-.5-1	12/14/16	10:15	S	JG
-18	B-2016-5-11-11.5	12/14/16	10:25	S	JG
-19	B-2016-5-15-15.5	12/14/16	10:45	S	JG
-20	B-2016-6-4.5-5	12/15/16	10:10	S	JG

Container Type	A								
Preservative	A								

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	12/16/16 1330		12/16/16 13:30
	12/16/16 16:17		12-16-16 1800
	12-16-16 2250		12/16/16 2250
	12/17/16 12:35		12/17/16 12:35

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Page 3 of 5

Date Rec'd in Lab: 12/17/16

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Client: Cornerstone
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Project Name: Ford-Ringwood
Project Location: Ringwood, NJ
Project #: 140802-018
(Use Project name as Project #) ☐
Project Manager: Tim Roeper
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☒ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☒ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	A2-NJ-SVOC-8270 A2-NJ-PAH-8270SIM	Total Bottle	Sample Specific Comments
L1641090-21	B-2016-6-1.5-2	12/15/16	10:00	S	JG	X		
-22	B-2016-7-9-9.5	12/15/16	8:40	S	JG	X		
-23	B-2016-7-11.5-12	12/15/16	8:55	S	JG	X		
-24	B-2016-8-11-11.5	12/15/16	9:45	S	JG	X		
-25	B-2016-8-9-9.5	12/15/16	9:35	S	JG	X		
-26	B-2016-8-4.5-5	12/15/16	9:20	S	JG	X		
-27	B-2016-9-6-6.5	12/15/16	10:55	S	JG	X		
-28	B-2016-9-2-2.5	12/15/16	10:40	S	JG	X		
-29	B-2016-10-4-4.5	12/14/16	14:40	S	JG	X		
-30	B-2016-10-9-9.5	12/14/16	14:45	S	JG	X		

Container Type: A
Preservative: A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	12/16/16 13:30		12/16/16 13:30
	12/16/16 16:17		12-16-16 1800
	12-16-16 2250		12/16/16 2250
	12/17/16 02:35		12/17/16 02:35

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 4 of 5

Date Rec'd in Lab: 12/17/16

ALPHA Job #: L1641090

Client Information

Client: Cornerstone
Address: 100 Crystal Run Rd
Middletown, NY 10941
Phone: 845-695-0252
Fax:
Email: Tim.Roeper@cornerstoneeg.com

Project Information

Project Name: Ford- Ringwood
Project Location: Ringwood, NJ
Project #: 140802-018
(Use Project name as Project #)
Project Manager: Tim Roeper
ALPHAQuote #:

Turn-Around Time

Standard [X] Due Date:
Rush (only if pre approved) [ ] # of Days:

These samples have been previously analyzed by Alpha [ ]

For EPH, selection is REQUIRED:
[ ] Category 1
[ ] Category 2

For VOC, selection is REQUIRED:
[ ] 1,4-Dioxane
[ ] 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

Deliverables

[X] NJ Full / Reduced
[ ] EQuIS (1 File) [ ] EQuIS (4 File)
[ ] Other

Regulatory Requirement

[ ] SRS Residential/Non Residential
[ ] SRS Impact to Groundwater
[ ] NJ Ground Water Quality Standards
[ ] NJ IGW SPLP Leachate Criteria
[ ] Other

Billing Information

[X] Same as Client Info
PO # L1641096

Site Information

Is this site impacted by Petroleum? Yes [ ]
Petroleum Product:

ANALYSIS

Sample Filtration
[ ] Done
[ ] Lab to do
Preservation
[ ] Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	A2-WS-SVOC-8270 A2-WS-PAH-8270 SIM	Sample Specific Comments
41090-31	B-2016-10-11.5-12	12/14/16	14:50	S	JG	X	
-32	B-2016-10-20-21.5	12/14/16	15:40	S	JG	X	
-33	B-2016-11-5-5.5	12/15/16	13:15	S	JG	X	
-34	B-2016-11-11-11.5	12/15/16	13:30	S	JG	X	
-35	B-2016-12-5.5-6	12/15/16	11:40	S	JG	X	
-36	B-2016-12-4-4.5	12/15/16	11:30	S	JG	X	
-37	B-2016-13-5-5.5	12/14/16	13:15	S	JG	X	
-38	B-2016-13-10-10.5	12/14/16	14:00	S	JG	X	
-39	B-2016-13-15-15.5	12/14/16	14:20	S	JG	X	
-40	B-2016-14-4-4.5	12/15/16	12:45	S	JG	X	

Container Type: A
Preservative: A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	12/16/16 13:30		12/16/16 13:30
	12/16/16 16:17		12-16-16 1800
	12-16-16 2250		12/16/16 2250
	12/17/16 02:35		12/17/16 02:35

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Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

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Page 5 of 5

Date Rec'd in Lab: 12/17/16

ALPHA Job #: L1641090

Client Information
Client: Cornerstone
Address: 100 Crystal Run Rd
Middletown, NY 10941
Phone: 845-695-0252
Fax:
Email: Tim.Roeper@cornerstoneeg.com

Project Information
Project Name: Ford- Ringwood
Project Location: Ringwood, NJ
Project #: 140802-018
(Use Project name as Project #) ☐
Project Manager: Tim Roeper
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☒ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☒ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: A2-NJ-8270	A2-NJ-PAH-8270SIM	Total Bottle	Sample Specific Comments
41090 -41	B-2016-14-10-10.5	12/15/16	13:00	S	JG	X			
-42	Dup-1	12/14/16	12:00	S	JG	X			
-43	Dup-2	12/15/16	12:00	S	JG	X			

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type: A
Preservative: A

Relinquished By:	Date/Time	Received By:	Date/Time
	13:30 12/16/16		12/16/16 13:30
	12/16/16 16:17		12-16-16 1800
	12-16-16 2250		12/16/16 2336
	12/17/16 12:35		12/17/16 12:35

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

World Class Chemistry

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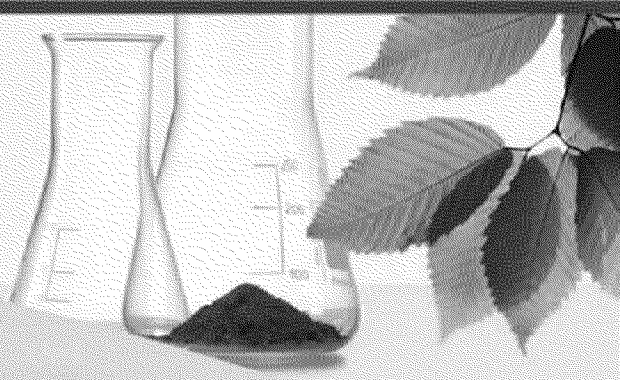

Lab Number: L1641084

Client: Cornerstone/Cadena Co. joint ac

ATTN: Jim Tomalia

Project Name: FORD-RINGWOOD

Project Number: 140802-018

ANALYTICAL DATA PACKAGE FOR THE
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
TRENTON NEW JERSEY 08625

Agency/Division:	**Bureau/Office:**
Project No: 140802-018	**Contract No:**
Laboratory: Alpha Analytical	**Laboratory Location:** Westborough, Ma.
	Laboratory Phone Number: (508) 898-9220
SDG No: L1641084	**NJDEP Certification #:** MA015/MA935
Date of First Sample Receipt: 12/16/2016	**Date of Last Sample Receipt:** 12/16/2016

Agency Sample Number	Laboratory Sample Number	Sample Location	Date/Time of Collection
PW-1	L1641084-01	FORD-RINGWOOD	12/15/2016 07:30
PW-2	L1641084-02	FORD-RINGWOOD	12/15/2016 07:40

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on disk or electronically has been authorized by the laboratory director or his/her designee, as verified by the following signature.

Technical Director/Representative (Typed)	Sue ONeil	01/04/17
Technical Director/Representative (Signature)	Susan E ONeil	

Table of Contents

Chain of Custody

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
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FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab 12/17/16

ALPHA Job # L1691084

Client Information

Client: Ford - Ringwood (cornerstone)
Address: Peters Mine Road
100 Crystal Run Rd, Middletown, NY 10941
Phone: 845-695-0252
Fax:
Email: Tim.Roeper@cornerstoneeg.com

Project Information

Project Name: Ford - Ringwood
Project Location: Ringwood, NJ
Project # 140802-018
(Use Project name as Project #) ☐
Project Manager: Tim. Roeper
ALPHAQuote #:

Turn-Around Time

Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☒ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☒ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

A2-MS-SVOC-8270
A2-MS-PAH-8270SIM

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	A2-MS-SVOC-8270	A2-MS-PAH-8270SIM	Sample Specific Comments
41084-01	PW-1	12/15/16	7:30	Paint Waste	JG	X		
-02	PW-2	12/15/16	7:40	Paint Waste	JG	X		

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type: O
Preservative: A

Relinquished By:	Date/Time	Received By:	Date/Time
	12/16/16 13:31		12/16/16 13:31
	12/16/16 16:17		12-16-16 1800
	12-16-16 2250		12/16/16 2250
	12/17/16 02:35		12/17/16 02:35

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Form No: 01-14 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Jan 04 2017, 03:05 pm

Login Number: L1641084

Account: CSTONE-CADENACO Cornerstone/Cadena Co. joint accountProject: 140802-018

Received: 16DEC16 Due Date: 23DEC16

Sample #	Client ID	Mat	PR	Collected	Container
L1641084-01	PW-1	4	S0	15DEC16 07:30	1-BAG

When breaking up chunks, use center of material to run analysis NJ-RED Package Due Date: 12/23/16

A2-1,4-DIOXANE-SIM,NJ-RED,NJDEP,TS100

Sample #	Client ID	Mat	PR	Collected	Container
L1641084-02	PW-2	4	S0	15DEC16 07:40	1-BAG

When breaking up chunks, use center of material to run analysis Package Due Date: 12/23/16

A2-1,4-DIOXANE-SIM,TS100

Logged By: Michael Chang

ALPHA ANALYTICAL LABORATORIES
Container Tracking Report

Container ID	Type	Status	Transaction Date	From Response	From Location	From Operator	To Response	To Location	To Operator
L1641084-01A	BAG	INTACT	20-DEC-16	CUSTODY	A2-ORGANIC PREP	Tyler Snook	A2-CUSTODY-FRZ1-U1	A2-CUSTODY-FRZ1-U1	Tyler Snook
L1641084-01A	BAG	INTACT	20-DEC-16	A2-CUSTODY-REFRIDGE	A2-CUSTODY-FRZ1-U1	Sarah Barr	A2-ORGANIC PREP	A2-ORGANIC PREP	Sarah Barr
L1641084-01A	BAG	INTACT	17-DEC-16	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Bethany Bedard	A2-CUSTODY-FRZ1-U1	A2-CUSTODY-FRZ1-U1	Bethany Bedard
L1641084-01A	BAG	INTACT	17-DEC-16	A2-LOGIN	A2-LOGIN	Michael Chang	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Michael Chang
L1641084-02A	BAG	INTACT	20-DEC-16	CUSTODY	A2-ORGANIC PREP	Tyler Snook	A2-CUSTODY-FRZ1-U1	A2-CUSTODY-FRZ1-U1	Tyler Snook
L1641084-02A	BAG	INTACT	20-DEC-16	A2-CUSTODY-REFRIDGE	A2-CUSTODY-FRZ1-U1	Sarah Barr	A2-ORGANIC PREP	A2-ORGANIC PREP	Sarah Barr
L1641084-02A	BAG	INTACT	17-DEC-16	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Bethany Bedard	A2-CUSTODY-FRZ1-U1	A2-CUSTODY-FRZ1-U1	Bethany Bedard
L1641084-02A	BAG	INTACT	17-DEC-16	A2-LOGIN	A2-LOGIN	Michael Chang	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Michael Chang

Methodology Review

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Laboratory Chronicle

Sample Receipt and Container Information

Were project specific reporting limits specified? NO

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1641084-01A	Bag	A	N/A	4.3	Y	Absent	A2-1,4-DIOXANE-SIM(14)
L1641084-02A	Bag	A	N/A	4.3	Y	Absent	A2-1,4-DIOXANE-SIM(14)

*Values in parentheses indicate holding time in days

NJ DEP
Data of Known Quality Protocols
Conformance/Non-Conformance
Summary Questionnaire

NJ DEP Data of Known Quality Protocols
Conformance/Non-Conformance
Summary Questionnaire

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the NJDEP Data of Known Quality performance standards?	YES
1a	Were the method specified handling, preservation, and holding time requirements met?	YES
1b	EPH Method: Was the EPH Method conducted without significant modifications (see Section 11.3 of respective DKQ methods)?	N/A
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	YES
3	Were all samples received at an appropriate temperature (4 ± 2° C)?	YES
4	Were all QA/QC performance criteria specified in the NJDEP DKQP standards achieved?	YES
5a	Were reporting limits specified or referenced on the chain-of-custody or communicated to the laboratory prior to sample receipt?	NO
5b	Were these reporting limits met?	N/A
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the DKQP documents and/or site-specific QAPP?	NO
7	Are project-specific matrix spikes and/or laboratory duplicates included in this data set?	NO

Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1a or #1b is "No", the data package does not meet the requirements for "Data of Known Quality".

Conformance/Non-Conformance Summary

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

DKQP Related Narratives

Report Submission

In reference to question 5a:

Reporting limits were not specified.

Semi-Volatiles

In reference to question 6:

At the client's request, all submitted samples were not analyzed for the full DKQP list of constituents identified in the method specific analyte list presented in the DKQP documents.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Report Date: 01/04/17

Title: Technical Director/Representative

Glossary

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Organics

GC/MS Extractable Analysis
Method 8270
Selective Ion Monitoring

Sample Results Summary

Form 1
SemiVolatile Organics

Client	: Cornerstone/Cadena Co. joint accoun	Lab Number	: L1641084
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018
Lab ID	: L1641084-01	Date Collected	: 12/15/16 07:30
Client ID	: PW-1	Date Received	: 12/16/16
Sample Location	: RINGWOOD, NJ	Date Analyzed	: 01/03/17 03:25
Sample Matrix	: Paint	Date Extracted	: 12/20/16
Analytical Method	: 1,8270D-SIM	DilutionFactor	: 1
Lab File ID	: F601021724	Analyst	: SF
Sample Amount	: 5.58 g	Instrument ID	: BNA6
Extraction Method	: EPA 3570	GC Column	: RTX-5
Extract Volume	: 4000 uL	%Solids	: 100
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
123-91-1	1,4-Dioxane	ND	7.17	3.58	U

Form 1
SemiVolatile Organics

Client	: Cornerstone/Cadena Co. joint accoun	Lab Number	: L1641084
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018
Lab ID	: L1641084-02	Date Collected	: 12/15/16 07:40
Client ID	: PW-2	Date Received	: 12/16/16
Sample Location	: RINGWOOD, NJ	Date Analyzed	: 01/03/17 04:08
Sample Matrix	: Paint	Date Extracted	: 12/20/16
Analytical Method	: 1,8270D-SIM	DilutionFactor	: 1
Lab File ID	: F601021725	Analyst	: SF
Sample Amount	: 5.75 g	Instrument ID	: BNA6
Extraction Method	: EPA 3570	GC Column	: RTX-5
Extract Volume	: 4000 uL	%Solids	: 100
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
123-91-1	1,4-Dioxane	ND	6.96	3.48	U

Form 1
SemiVolatile Organics

Client	: Cornerstone/Cadena Co. joint accoun	Lab Number	: L1641084
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018
Lab ID	: WG963084-1	Date Collected	: NA
Client ID	: WG963084-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 01/03/17 01:18
Sample Matrix	: SOLID	Date Extracted	: 12/20/16
Analytical Method	: 1,8270D-SIM	DilutionFactor	: 1
Lab File ID	: F601021721	Analyst	: SF
Sample Amount	: 5 g	Instrument ID	: BNA6
Extraction Method	: EPA 3570	GC Column	: RTX-5
Extract Volume	: 4000 uL	%Solids	: NA
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
123-91-1	1,4-Dioxane	ND	8.00	4.00	U

Tuning Results Summary

Instrument Performance Check
Decafluorotriphenylphosphine (DFTPP)
Form 5

Client	: Cornerstone/Cadena Co. joint accoun	Lab Number	: L1641084
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018
Instrument ID	: BNA6	Analysis Date	: 12/29/16 12:33
Tune Standard	: R932366-9	Tune File ID	: F612291603_tune

m/e	Ion Abundance Criteria	%Relative Abundance
51	10.0 - 80.0% of Base Peak	40
68	Less than 2.0% of mass 69	0 (0)1
70	Less than 2.0% of mass 69	0.2 (.6)1
127	10.0 - 80.0% of Base Peak	49.4
197	Less than 2.0% of mass 198	0
198	Base Peak, or >50% of mass 442	100
199	5.0 - 9.0% of mass 198	6.9
275	10.0 - 60.0% of Base Peak	26.4
365	Greater than 1.0% of mass 198	3
441	Present, but less than 24% of mass 442	15.6
442	Base Peak, or >50% of mass 198	95.5
443	15.0 - 24.0% of mass 442	18.8 (19.7)2

1-Value is % of mass 69 2-Value is % of mass 442

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

Client Sample ID	Lab Sample ID	File ID	Analysis Date/Time
STD 10	R932366-1	F612291604	12/29/16 13:28
STD 50	R932366-3	F612291605	12/29/16 14:11
STD 100	R932366-5	F612291606	12/29/16 14:54
STD 500	R932366-4	F612291607	12/29/16 15:37
STD 1000	R932366-2	F612291608	12/29/16 16:21
STD 5000	R932366-6	F612291609	12/29/16 17:04
STD 10000	R932366-7	F612291610	12/29/16 17:47
ICV Quant Report STD 1000	R932366-8	F612291611	12/29/16 18:30

Instrument Performance Check
Decafluorotriphenylphosphine (DFTPP)
Form 5

Client	: Cornerstone/Cadena Co. joint accoun	Lab Number	: L1641084
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018
Instrument ID	: BNA6	Analysis Date	: 01/02/17 20:50
Tune Standard	: WG964509-13	Tune File ID	: F601021715_tune

m/e	Ion Abundance Criteria	%Relative Abundance
51	10.0 - 80.0% of Base Peak	39.5
68	Less than 2.0% of mass 69	0 (0)1
70	Less than 2.0% of mass 69	0.2 (.6)1
127	10.0 - 80.0% of Base Peak	50
197	Less than 2.0% of mass 198	0
198	Base Peak, or >50% of mass 442	100
199	5.0 - 9.0% of mass 198	7
275	10.0 - 60.0% of Base Peak	26
365	Greater than 1.0% of mass 198	3
441	Present, but less than 24% of mass 442	15.6
442	Base Peak, or >50% of mass 198	87.1
443	15.0 - 24.0% of mass 442	17.3 (19.9)2

1-Value is % of mass 69 2-Value is % of mass 442

This Check Applies to the following Samples, MS, MSD, Blanks, and Standards:

Client Sample ID	Lab Sample ID	File ID	Analysis Date/Time
WG964509-15CCAL	WG964509-15	F601021716	01/02/17 21:45
WG963084-1BLANK	WG963084-1	F601021721	01/03/17 01:18
WG963084-2LCS	WG963084-2	F601021722	01/03/17 02:00
WG963084-3LCSD	WG963084-3	F601021723	01/03/17 02:43
PW-1	L1641084-01	F601021724	01/03/17 03:25
PW-2	L1641084-02	F601021725	01/03/17 04:08

Blank Results Summary

Method Blank Summary
Form 4

Client	: Cornerstone/Cadena Co. joint accoun	Lab Number	: L1641084
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018
Lab Sample ID	: WG963084-1	Lab File ID	: F601021721
Instrument ID	: BNA6	Extraction Date	: 12/20/16
Matrix	: SOLID	Analysis Date	: 01/03/17 01:18
Level	: LOW		

Client Sample No.	Lab Sample ID	Analysis Date
WG963084-2LCS	WG963084-2	01/03/17 02:00
WG963084-3LCSD	WG963084-3	01/03/17 02:43
PW-1	L1641084-01	01/03/17 03:25
PW-2	L1641084-02	01/03/17 04:08

Standards Data Summary

Initial Calibration Summary
Form 6

Client	: Cornerstone/Cadena Co. joint accoun	**Lab Number**	: L1641084
Project Name	: FORD-RINGWOOD	**Project Number**	: 140802-018
Instrument ID	: BNA6	**Ical Ref**	: ICAL13258
Calibration dates	: 12/29/16 13:28 12/29/16 17:47		

Calibration Files
10 =F612291604.D 50 =F612291605.D 100 =F612291606.D 500 =F612291607.D 1000=F612291608.D
5000=F612291609.D 1e4 =F612291610.D

	Compound	10	50	100	500	1000	5000	1e4	Avg	%RSD
1)	1,4-Dioxane-d8 (IS)	----------ISTD----------								
2)	1,4-dioxane	1.262	1.297	1.259	1.269	1.305	1.309	1.375	1.297	3.10
3) I	1,4-Dichlorobenzene-d4	----------ISTD----------								
4) s	1,4-dioxane-d8	0.933	1.004	1.039	1.064	1.091	1.151	1.181	1.066	7.95

Continuing Calibration
Form 7

Client	: Cornerstone/Cadena Co. joint accoun	Lab Number	: L1641084	
Project Name	: FORD-RINGWOOD	Project Number	: 140802-018	
Instrument ID	: BNA6	Calibration Date	: 01/02/17 21:45	
Lab File ID	: F601021716	Init. Calib. Date(s)	: 12/29/16	12/29/16
Sample No	: WG964509-15	Init. Calib. Times	: 13:28	17:47
Channel	:			

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,4-Dioxane-d8 (IS)	1	1	-	0	20	87	-.08
1,4-dioxane	1.297	1.315	-	-1.4	20	88	-.08
1,4-Dichlorobenzene-d4	1	1	-	0	20	79	-.01
1,4-dioxane-d8	1.066	1.211	-	-13.6	20	87	-.08

* Value outside of QC limits.

Surrogate Summary

Form 2
Surrogate Recovery
SEMIVOLATILES

Client: Cornerstone/Cadena Co. joint account
Project Name: FORD-RINGWOOD

Lab Number: L1641084
Project Number: 140802-018
Matrix: Paint

CLIENT ID (LAB SAMPLE NO.)	S1 ()	S2 ()	S3 ()	S4 ()	S5 ()	S6 ()	TOT OUT
WG963084-3LCSD	99	--	--	--	--	--	0
WG963084-2LCS	100	--	--	--	--	--	0
WG963084-1BLANK	106	--	--	--	--	--	0
PW-1 (L1641084-01)	58	--	--	--	--	--	0
PW-2 (L1641084-02)	54	--	--	--	--	--	0

	QC LIMITS
S1 = 1,4-DIOXANE-D8	(15-110)

* Values outside of QC limits

FORM II A2-1,4-DIOXANE-SIM

Batch QC Summary

Laboratory Control Sample
Form 3

Client	: Cornerstone/Cadena Co. joint accoun	**Lab Number**	: L1641084
Project Name	: FORD-RINGWOOD	**Project Number**	: 140802-018
Matrix	: SOLID		
LCS Sample ID	: WG963084-2 **Analysis Date**	: 01/03/17 02:00 **File ID**	: F601021722
LCSD Sample ID	: WG963084-3 **Analysis Date**	: 01/03/17 02:43 **File ID**	: F601021723

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	True (ug/kg)	Found (ug/kg)	%R	True (ug/kg)	Found (ug/kg)	%R	RPD	Recovery Limits	RPD Limit
1,4-Dioxane	400	384.	96	400	393.	98	2	40-140	30

Internal Standard Summary

Internal Standard Area and RT Summary
Form 8

Client	: Cornerstone/Cadena Co. joint accoun	**Lab Number**	: L1641084
Project Name	: FORD-RINGWOOD	**Project Number**	: 140802-018
Instrument ID	: BNA6	**Analysis Date**	: 01/02/17 21:45
Sample No	: WG964509-15	**Lab File ID**	: F601021716

	1,4-Dichlorobenzene-d4					
	Area	RT	Area	RT	Area	RT
WG964509-15	64013	15.71				
Upper Limit	128026	16.21				
Lower Limit	32007	15.21				
Sample ID						
WG963084-1 BLANK	48054	15.71				
WG963084-2 LCS	46190	15.71				
WG963084-3 LCSD	41913	15.71				
PW-1	62867	15.75				
PW-2	100418	15.78				

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = +0.50 minutes of internal standard RT
RT Lower Limit = -0.50 minutes of internal standard RT

* Values outside of QC limits

Chromatograms

Sample Raw Data

Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\BNA6\2017\JAN\JAN02\
Data File : F601021724.D
Acq On : 3 Jan 2017 3:25 am
Operator : BNA6:SF
Sample : L1641084-01
Misc : WG964509,WG963084,ICAL13258
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jan 03 20:29:07 2017
Quant Method : O:\Organics\DATA\BNA6\2017\JAN\JAN02\14DIOX1229BNA6.M
Quant Title : Semivolatiles by GC/MS
QLast Update : Thu Dec 29 20:10:25 2016
Response via : Initial Calibration

Sub List : Default - All compounds listed

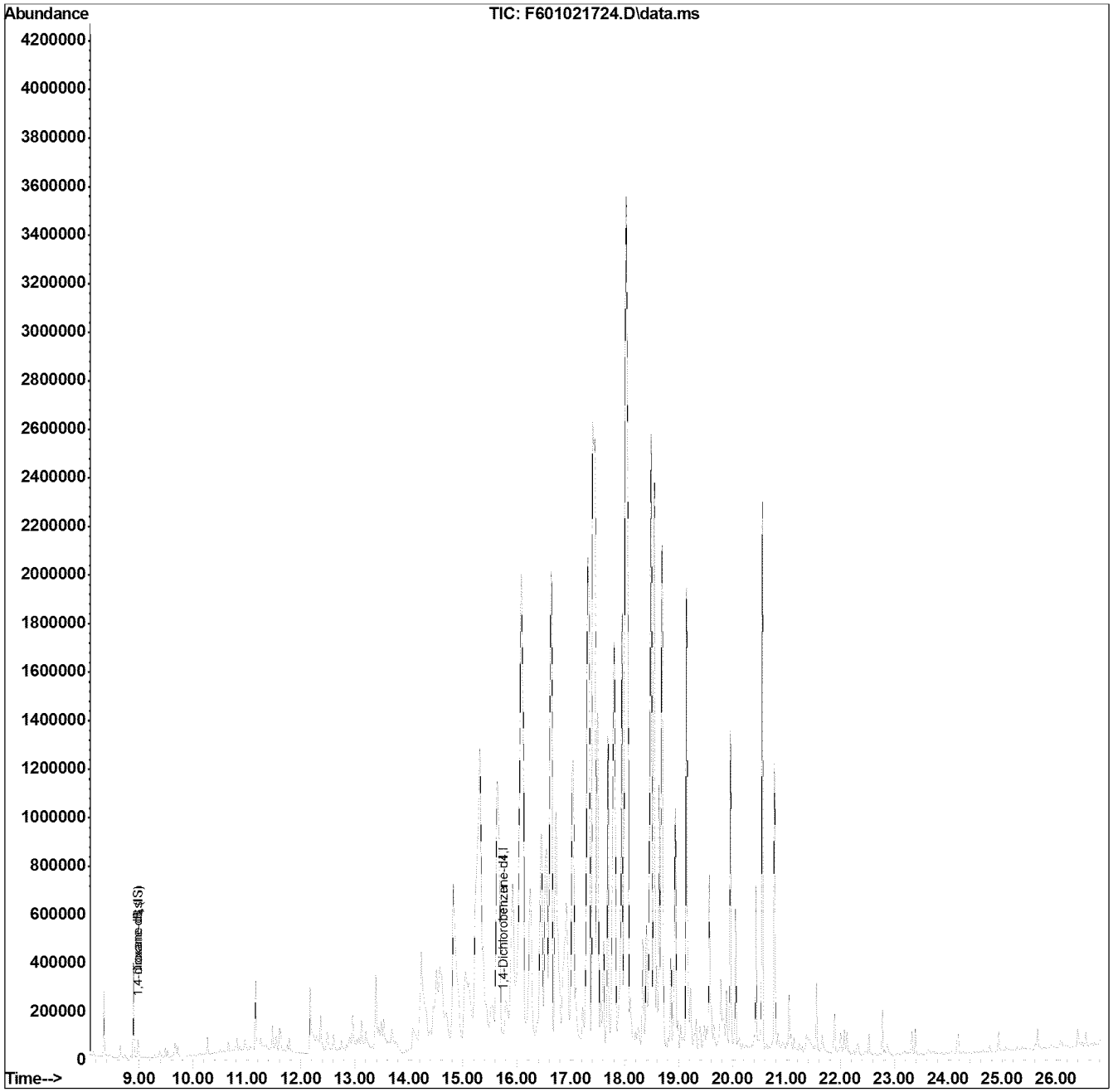
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8 (IS)	8.980	64	39138	500.000	ng/mL	-0.12
3) 1,4-Dichlorobenzene-d4	15.752	152	62867M4	500.000	ng/mL	0.03
System Monitoring Compounds						
4) 1,4-dioxane-d8	8.980	64	39138	291.938	ng/mL	-0.12
Spiked Amount 500.000	Range 15 - 115		Recovery =	58.39%		
Target Compounds						Qvalue
2) 1,4-dioxane	0.000		0	N.D.	d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed Reviewed)

Data Path : O:\Organics\DATA\BNA6\2017\JAN\JAN02\
Data File : F601021724.D
Acq On : 3 Jan 2017 3:25 am
Operator : BNA6:SF
Sample : L1641084-01
Misc : WG964509,WG963084,ICAL13258
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jan 03 20:29:07 2017
Quant Method : O:\Organics\DATA\BNA6\2017\JAN\JAN02\14DIOX1229BNA6.M
Quant Title : Semivolatiles by GC/MS
QLast Update : Thu Dec 29 20:10:25 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\BNA6\2017\JAN\JAN02\
Data File : F601021725.D
Acq On : 3 Jan 2017 4:08 am
Operator : BNA6:SF
Sample : L1641084-02
Misc : WG964509,WG963084,ICAL13258
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jan 03 20:30:45 2017
Quant Method : O:\Organics\DATA\BNA6\2017\JAN\JAN02\14DIOX1229BNA6.M
Quant Title : Semivolatiles by GC/MS
QLast Update : Thu Dec 29 20:10:25 2016
Response via : Initial Calibration

Sub List : Default - All compounds listed

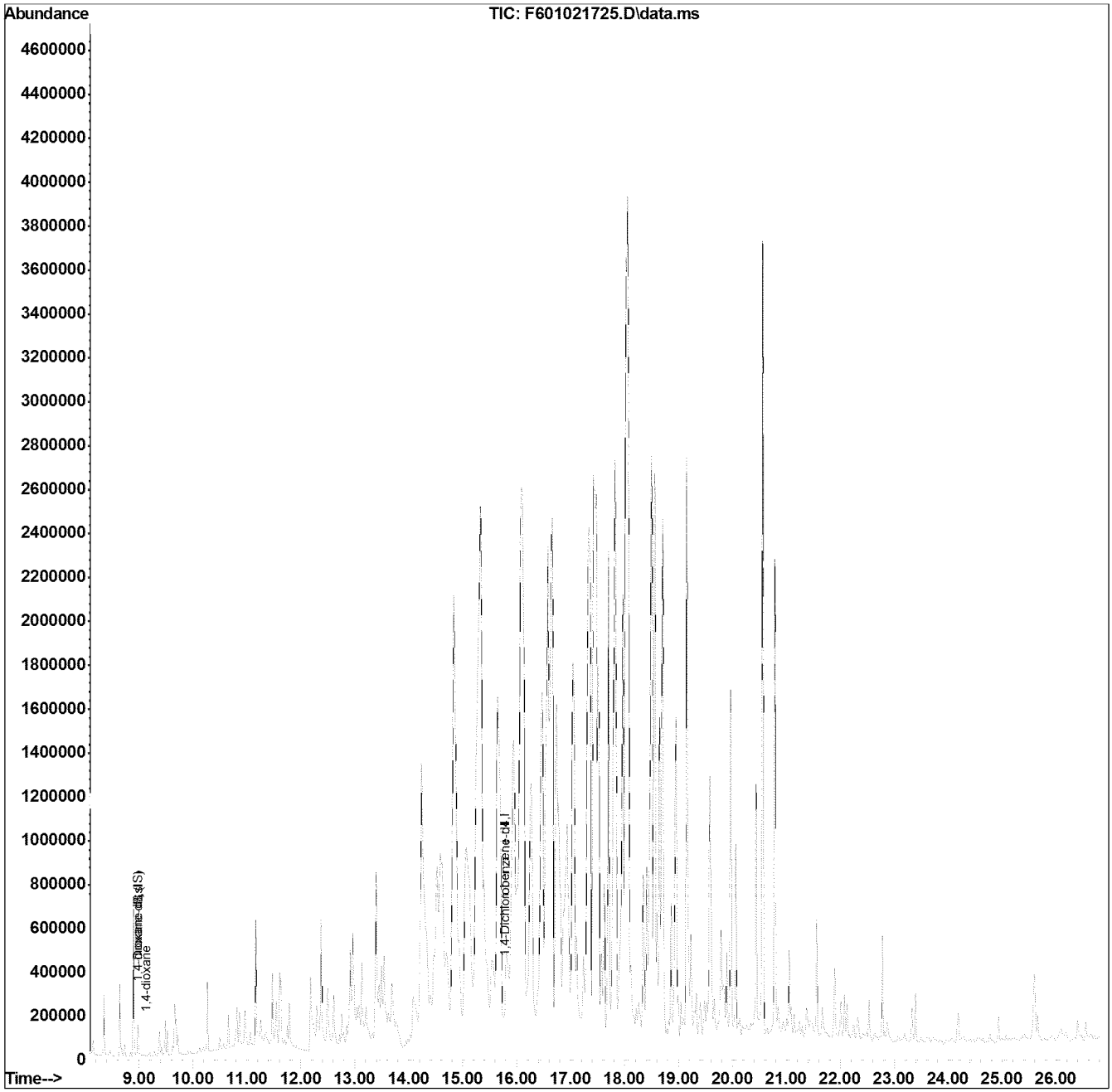
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8 (IS)	8.980	64	57887	500.000	ng/mL	-0.12
3) 1,4-Dichlorobenzene-d4	15.784	152	100418M4	500.000	ng/mL	0.07
System Monitoring Compounds						
4) 1,4-dioxane-d8	8.980	64	57887	270.324	ng/mL	-0.12
Spiked Amount 500.000	Range 15 - 115		Recovery =	54.06%		
Target Compounds						Qvalue
2) 1,4-dioxane	9.135	88	706M4	4.703	ng/mL	

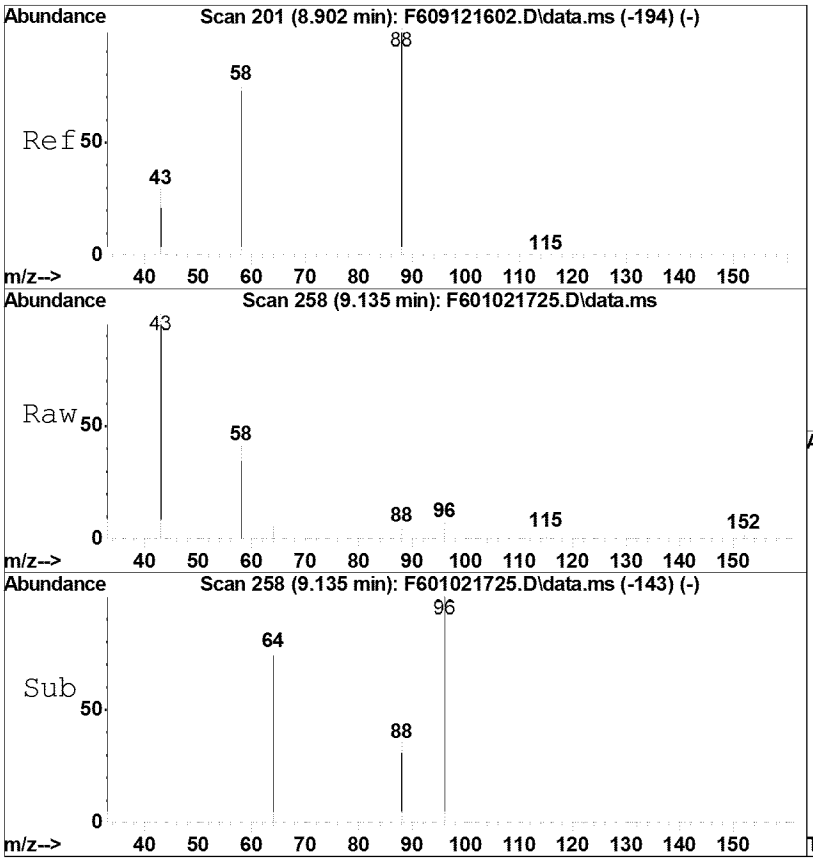
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed Reviewed)

Data Path : O:\Organics\DATA\BNA6\2017\JAN\JAN02\
Data File : F601021725.D
Acq On : 3 Jan 2017 4:08 am
Operator : BNA6:SF
Sample : L1641084-02
Misc : WG964509,WG963084,ICAL13258
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jan 03 20:30:45 2017
Quant Method : O:\Organics\DATA\BNA6\2017\JAN\JAN02\14DIOX1229BNA6.M
Quant Title : Semivolatiles by GC/MS
QLast Update : Thu Dec 29 20:10:25 2016
Response via : Initial Calibration

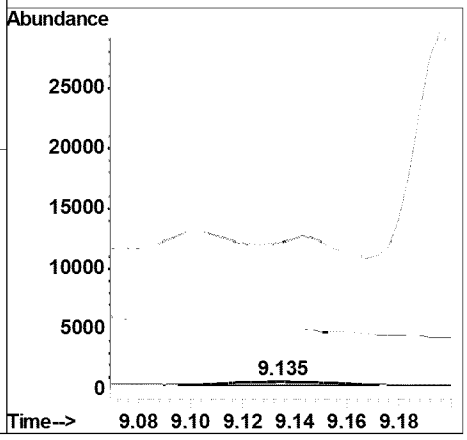




#2
1,4-dioxane
Concen: 4.70 ng/mL m
RT: 9.135 min Scan# 258
Delta R.T. -0.033 min
Lab File: F601021725.D
Acq: 3 Jan 2017 4:08 am

Tgt Ion: 88 Resp: 706

Ion	Ratio	Lower	Upper
88	100		
58	0.0	60.0	90.0#
43	0.0	23.8	35.8#



Method Blank
Raw Data

Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\BNA6\2017\JAN\JAN02\
Data File : F601021721.D
Acq On : 3 Jan 2017 1:18 am
Operator : BNA6:SF
Sample : WG963084-1
Misc : WG964509,WG963084,ICAL13258
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jan 03 19:54:08 2017
Quant Method : O:\Organics\DATA\BNA6\2017\JAN\JAN02\14DIOX1229BNA6.M
Quant Title : Semivolatiles by GC/MS
QLast Update : Thu Dec 29 20:10:25 2016
Response via : Initial Calibration

Sub List : Default - All compounds listed

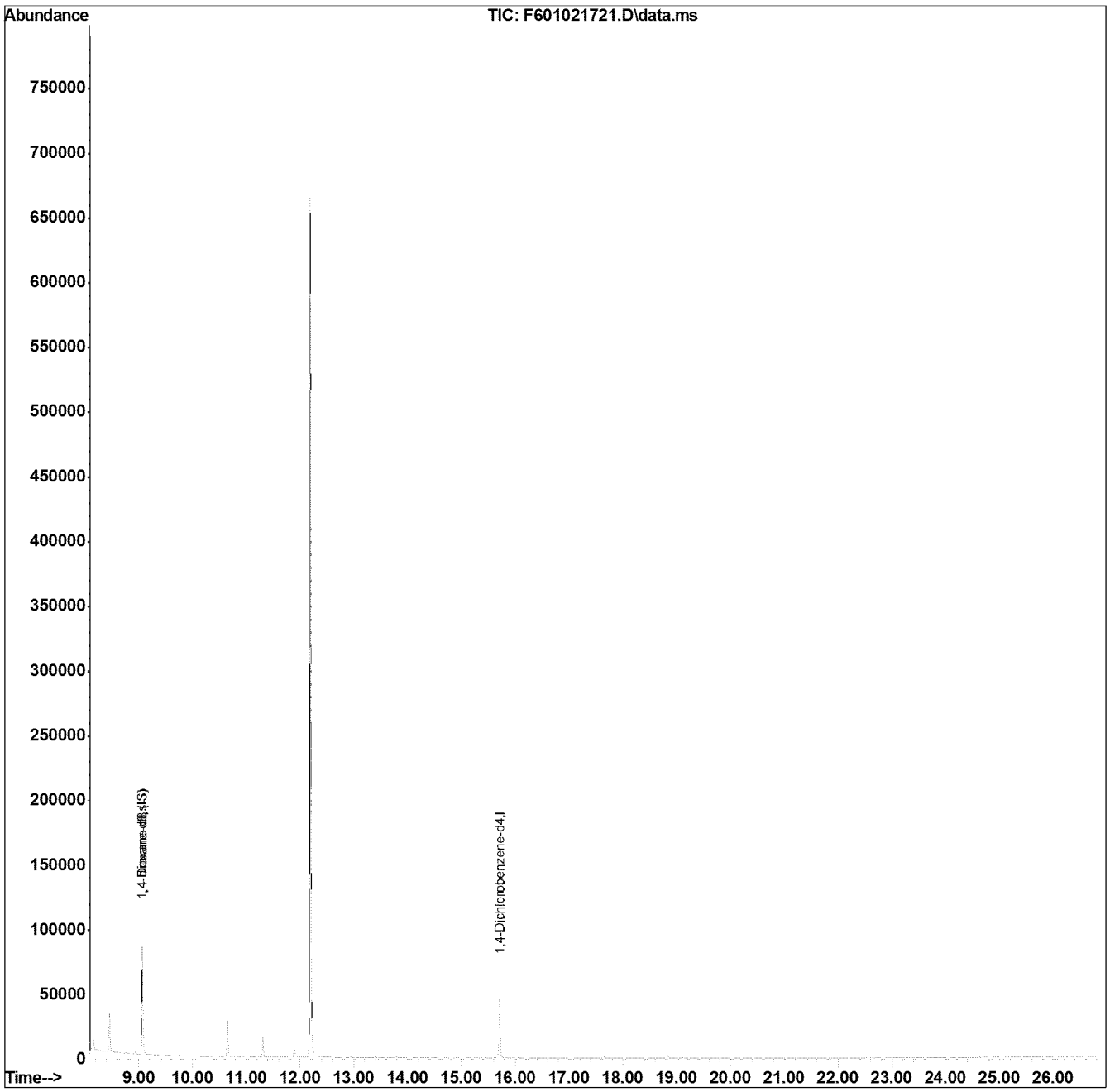
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8 (IS)	9.065	64	54499	500.000	ng/mL	-0.04
3) 1,4-Dichlorobenzene-d4	15.707	152	48054	500.000	ng/mL	-0.01
System Monitoring Compounds						
4) 1,4-dioxane-d8	9.065	64	54499	531.831	ng/mL	-0.04
Spiked Amount 500.000	Range 15 - 115		Recovery = 106.37%			
Target Compounds						Qvalue
2) 1,4-dioxane	0.000		0	N.D.	d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Sub List : Default - All compounds listed Reviewed)

Data Path : O:\Organics\DATA\BNA6\2017\JAN\JAN02\
Data File : F601021721.D
Acq On : 3 Jan 2017 1:18 am
Operator : BNA6:SF
Sample : WG963084-1
Misc : WG964509,WG963084,ICAL13258
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jan 03 19:54:08 2017
Quant Method : O:\Organics\DATA\BNA6\2017\JAN\JAN02\14DIOX1229BNA6.M
Quant Title : Semivolatiles by GC/MS
QLast Update : Thu Dec 29 20:10:25 2016
Response via : Initial Calibration



ATTACHMENT C – DATA VALIDATION REPORTS

E-Mail Date: 2017-01-11
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER – 140802-018
CADENA PROJECT E203361
SAMPLES COLLECTED DECEMBER 2016
SUBMITTAL #: L1641090

PREPARED BY:
CADENA, INC.
1099 Highland Drive
Ann Arbor, MI 48108
Telephone: 517-819-0356
Fax: 734-975-6709
Contact: Jim Tomalia (jtomalia@cadenaco.com)
Date: 2017-01-11
www.CADENACO.com

TABLE OF CONTENTS

LISTS OF APPNEDICES

(Following Text)

LIST OF ATTACHMENTS

1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by ALPHA Analytical Laboratory Mansfield and Westborough MA the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted . The sampling and analysis summary listing sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. The summary of all of the field sample results and qualifiers associated with this submittal is presented in Appendix 3. Executive summary of qualified d ata only is reported in Appendix 4. Lab deliverables relevant to this submittal are included as attachments at the end of this report.

Table 1.1

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	GCMS SVOC SIM
L1641090-01	B-2016-1-5-5.5	12/13/2016	X
L1641090-02	B-2016-1-9-9.5	12/13/2016	X
L1641090-03	B-2016-1-13.5-14	12/13/2016	X
L1641090-04	B-2016-1-20-20.5	12/14/2016	X
L1641090-05	B-2016-2-4.5-5	12/13/2016	X
L1641090-06	B-2016-2-11-11.5	12/13/2016	X
L1641090-07	B-2016-2-16.5-17	12/13/2016	X
L1641090-08	B-2016-2-21.5-22	12/14/2016	X
L1641090-09	B-2016-3-5.5-6	12/14/2016	X
L1641090-10	B-2016-3-9.5-10	12/14/2016	X
L1641090-11	B-2016-3-14-14.5	12/14/2016	X
L1641090-12	B-2016-4-8.5-9	12/13/2016	X
L1641090-13	B-2016-4-11.0-11.5	12/13/2016	X
L1641090-14	B-2016-4-15-15.5	12/13/2016	X
L1641090-15	B-2016-4-20-20.5	12/13/2016	X
L1641090-16	B-2016-4-23.5-24	12/13/2016	X
L1641090-17	B-2016-5-.5-1	12/14/2016	X
L1641090-18	B-2016-5-11-11.5	12/14/2016	X
L1641090-19	B-2016-5-15-15.5	12/14/2016	X
L1641090-20	B-2016-6-4.5-5	12/15/2016	X
L1641090-21	B-2016-6-1.5-2	12/15/2016	X
L1641090-22	B-2016-7-9-9.5	12/15/2016	X
L1641090-23	B-2016-7-11.5-12	12/15/2016	X
L1641090-24	B-2016-8-11-11.5	12/15/2016	X
L1641090-25	B-2016-8-9-9.5	12/15/2016	X
L1641090-26	B-2016-8-4.5-5	12/15/2016	X
L1641090-27	B-2016-9-6-6.5	12/15/2016	X

L1641090-28	B-2016-9-2-2.5	12/15/2016	X
L1641090-29	B-2016-10-4-4.5	12/14/2016	X
L1641090-30	B-2016-10-9-9.5	12/14/2016	X
L1641090-31	B-2016-10-11.5-12	12/14/2016	X
L1641090-32	B-2016-10-20-21.5	12/14/2016	X
L1641090-33	B-2016-11-5-5.5	12/15/2016	X
L1641090-34	B-2016-11-11-11.5	12/15/2016	X
L1641090-35	B-2016-12-5.5-6	12/15/2016	X
L1641090-36	B-2016-12-4-4.5	12/15/2016	X
L1641090-37	B-2016-13-5-5.5	12/14/2016	X
L1641090-38	B-2016-10-10.5	12/14/2016	X
L1641090-39	B-2016-15-15.5	12/14/2016	X
L1641090-40	B-2016-14-4-4.5	12/15/2016	X
L1641090-41	B-2016-14-10-10.5	12/15/2016	X
L1641090-42	DUP-1	12/14/2016	X
L1641090-43	DUP-2	12/15/2016	X

Table 1.2 below lists the proje ct-specific analytes or analyte lists associated with the methods referenced in Table 1.1:

Table 1.2

Parameter	***Reference Method***	***AnalyteListing***
Semi-Volatile Organics	OSW-8270D/SIM - ISOTOPE DILUTION	1,4-Dioxane only

All "OSW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third editions final update IV or latest revision (with all subsequent revisions). The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.
Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis.

All of the data that was recalculated was consist ent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing this report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods and the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where

available. Comparison to NFG criteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW -6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.

ii.) "Standard Operating Procedure HW -2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are summarized in the Executive Summary section below.

Process controls for the validation review of the level 4 laboratory data package are referenced in the tables by method/analytical group within the body of this report.
Definitions for data qualifiers that may have been incorporated into the data tables for this report are noted below:

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS SVOC/SIM

No additional qualifications were made beyond those determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted durin g the validation review:

GCMS SVOC-SIM

GENERAL METHODOLOGY – Laboratory used GCMS SVOC method 8270D -SIM with method 35 70 prep. The 1,4 -dioxane analyte concentration was quantitated against the 1,4- dioxane-D8 surrogate which was also used as the internal standard. Method is considered to be isotope dilution however the "surrogate as internal standard" technique is not considered to be the industry standard quantitation approach. This would be considered to be a "results corrected for percent recovery" quantification technique so data generated using these calculations would not be comparable to field sample results generated by conventional internal standard quantification techniques (high bias of field sample results would be expected using this quantification technique).

Introducing the internal standard, 1,4 -dioxane-d8 prior to sample extraction treats the internal standard as a surrogate so precludes using the 50% to 200% internal standard recovery rule as referenced. The internal standard recovery rule is therefore applied only to the surrogates associated with samples that had internal standards injected prio r to analysis, and this data is provided in the Level 4, Form 8 Internal Standard and RT summary table. If the 1,4-dioxane-d8 data is to be legitimately considered to be an internal standard as well as surrogate it should, at a minimum, be subject to the 5 0%-200% response (recovery) criteria listed in the method. The current lower control limit for this internal standard as a surrogate is 15%. **In the case of this lab submittal the internal standard responses for ALL of the field samples were within the 5 0%-200% of daily CCV internal standard response criteria so the data is considered to be in compliance with method criteria.**

VERIFICATION SUMMARY

A level 2 data package was evaluated prior to receipt of the level 4 laboratory data package and the following findings were reported:

GCMS VOC samples -004, -006, -007, -011, -013, -014, -015, -016, -017, -018, -019, -021, -022, -024, -029, -031, -031, -032, -037 and all QC batch method blank and LCS SURROGATE recoveries were outliers biased high for at least 1 surrogate. Associated client sample results were non-detect so qualification was not required based on these high bias QC outliers.

2.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D -SIM analysis with ISOTOPE DILUTION– GENERAL QC REQUIREMENTS

See Attachments for submittal-specific review summary of QC requirements noted below
The target analyte list was defined by the client-project as 1,4-dioxane.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs met the method criteria for instrument sensitivity , retention time drift and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

2.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

2.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria for retention time and response . See executive summary for information concerning quantitation technique associated with internal standards.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re -analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate results are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were quantitated against the 1,4 -dichlorobenzene-d4 internal standard and were within the established laboratory control limits unless noted otherwise in

verification/validation summary. Note: surrogate analyte responses (1,4 -dioxane-D8) were also used as internal standards.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed for the target analyte SVOCs. The LCS recoveries and LCS/LCSD RPD were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

NOTE: MS/MSD QC samples were not analyzed as part of this QC batch.

Validator does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional s amples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

All target analytes were reported based on comparison to project-specific target analyte requirments.

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

Not required for this sampling event or laboratory submittal.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

Method blanks are evaluated if detected above the MDL. Client sample results that are less than 5 times the amount found in the blank for organic anal ytes (10X if analyte is considered to be a common lab contaminant) or less than 10 times the amount found in the blank for inorganic/metals analysis are flagged as non -detect at the RL with a UB flag if sample result is less than RL or non -detect at the co ncentration reported with a B flag if sample result is above the RL. See verification/validation summary for findings specific to this submittal.

3.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represent s actual environmental conditions. Representativeness was evaluated using the criteria noted in the following sections.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

3.1 SAMPLE PRESERVATION AND HOLDING TIMES

Holding time criteria, which reflect the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction, only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times a re compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criteria are qualitatively evaluated to determine their effect on sample representativeness.

All sample extractions and/or analyses were performed wit hin the specified holding times unless noted otherwise in verification/validation summary.

EPA Sample Holding Time and Preservation Requirements

Parameter	*Reference Method*	*Matrix*	*Preservation & Storage*	*Holding Times*
Semi-volatile Organics by GCMS	OSW-8270D-SIM	SOIL	Refrigeration 0-6ºC	14 days Extraction 40 days Analysis

3.2 METHOD BLANK SUMMARY

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

4.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

5.0 QC SUMMARY

All sample results were compliant with the project specific QAPP standard (if available) for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1
(Sample Analytical Summary – SAS table)

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: ALPHA Laboratories-Mansfield
Laboratory Submittal: L1641090

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	GCMS SVOC SIM
L1641090-01	B-2016-1-5-5.5	12/13/2016	X
L1641090-02	B-2016-1-9-9.5	12/13/2016	X
L1641090-03	B-2016-1-13.5-14	12/13/2016	X
L1641090-04	B-2016-1-20-20.5	12/14/2016	X
L1641090-05	B-2016-2-4.5-5	12/13/2016	X
L1641090-06	B-2016-2-11-11.5	12/13/2016	X
L1641090-07	B-2016-2-16.5-17	12/13/2016	X
L1641090-08	B-2016-2-21.5-22	12/14/2016	X
L1641090-09	B-2016-3-5.5-6	12/14/2016	X
L1641090-10	B-2016-3-9.5-10	12/14/2016	X
L1641090-11	B-2016-3-14-14.5	12/14/2016	X
L1641090-12	B-2016-4-8.5-9	12/13/2016	X
L1641090-13	B-2016-4-11.0-11.5	12/13/2016	X
L1641090-14	B-2016-4-15-15.5	12/13/2016	X
L1641090-15	B-2016-4-20-20.5	12/13/2016	X
L1641090-16	B-2016-4-23.5-24	12/13/2016	X
L1641090-17	B-2016-5-.5-1	12/14/2016	X
L1641090-18	B-2016-5-11-11.5	12/14/2016	X
L1641090-19	B-2016-5-15-15.5	12/14/2016	X
L1641090-20	B-2016-6-4.5-5	12/15/2016	X
L1641090-21	B-2016-6-1.5-2	12/15/2016	X
L1641090-22	B-2016-7-9-9.5	12/15/2016	X
L1641090-23	B-2016-7-11.5-12	12/15/2016	X
L1641090-24	B-2016-8-11-11.5	12/15/2016	X
L1641090-25	B-2016-8-9-9.5	12/15/2016	X
L1641090-26	B-2016-8-4.5-5	12/15/2016	X
L1641090-27	B-2016-9-6-6.5	12/15/2016	X
L1641090-28	B-2016-9-2-2.5	12/15/2016	X
L1641090-29	B-2016-10-4-4.5	12/14/2016	X
L1641090-30	B-2016-10-9-9.5	12/14/2016	X
L1641090-31	B-2016-10-11.5-12	12/14/2016	X
L1641090-32	B-2016-10-20-21.5	12/14/2016	X
L1641090-33	B-2016-11-5-5.5	12/15/2016	X
L1641090-34	B-2016-11-11-11.5	12/15/2016	X
L1641090-35	B-2016-12-5.5-6	12/15/2016	X
L1641090-36	B-2016-12-4-4.5	12/15/2016	X
L1641090-37	B-2016-13-5-5.5	12/14/2016	X
L1641090-38	B-2016-13-10-10.5	12/14/2016	X
L1641090-39	B-2016-13-15-15.5	12/14/2016	X
L1641090-40	B-2016-14-4-4.5	12/15/2016	X
L1641090-41	B-2016-14-10-10.5	12/15/2016	X
L1641090-42	DUP-1	12/14/2016	X
L1641090-43	DUP-2	12/15/2016	X

APPENDIX 2
(Laboratory Level 4 Data Package Table of Contents)

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APPENDIX 3
(Analytical Results Summary – ARS Table)

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: ALPHA Laboratories - Mansfield
Laboratory Submittal: L1641090

		Sample Name:	B-2016-1-5-5.5				B-2016-1-9-9.5				B-2016-1-13.5-14				B-2016-1-20-20.5				B-2016-2-4.5-5			
		Lab Sample ID:	L1641090-01				L1641090-02				L1641090-03				L1641090-04				L1641090-05			
		Sample Date:	12/13/2016				12/13/2016				12/13/2016				12/14/2016				12/13/2016			
				Report		Valid		Report		Valid		Report		Valid		Report		Valid		Report		Valid
Analyte	Cas No.		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS SVOC																						
OSW-8270DSIM																						
1,4-DIOXANE	123-91-1		ND	0.00849	mg/kg	---	ND	0.00857	mg/kg	---	ND	0.00873	mg/kg	---	ND	0.00815	mg/kg	---	ND	0.00762	mg/kg	---

			B-2016-2-11-11.5				B-2016-2-16.5-17				B-2016-2-21.5-22				B-2016-3-5.5-6				B-2016-3-9.5-10			
			L1641090-06				L1641090-07				L1641090-08				L1641090-09				L1641090-10			
			12/13/2016				12/13/2016				12/14/2016				12/14/2016				12/14/2016			
				Report		Valid		Report		Valid		Report		Valid		Report		Valid		Report		Valid
Analyte	Cas No.		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS SVOC																						
OSW-8270DSIM																						
1,4-DIOXANE	123-91-1		ND	0.00789	mg/kg	---	ND	0.00778	mg/kg	---	ND	0.00981	mg/kg	---	ND	0.00865	mg/kg	---	ND	0.00881	mg/kg	---

			B-2016-3-14-14.5				B-2016-4-8.5-9				B-2016-4-11.0-11.5				B-2016-4-15-15.5				B-2016-4-20-20.5			
			L1641090-11				L1641090-12				L1641090-13				L1641090-14				L1641090-15			
			12/14/2016				12/13/2016				12/13/2016				12/13/2016				12/13/2016			
				Report		Valid		Report		Valid		Report		Valid		Report		Valid		Report		Valid
Analyte	Cas No.		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS SVOC																						
OSW-8270DSIM																						
1,4-DIOXANE	123-91-1		ND	0.00996	mg/kg	---	ND	0.00819	mg/kg	---	ND	0.00863	mg/kg	---	ND	0.00881	mg/kg	---	ND	0.00819	mg/kg	---

			B-2016-4-23.5-24				B-2016-5-.5-1				B-2016-5-11-11.5				B-2016-5-15-15.5				B-2016-6-4.5-5			
			L1641090-16				L1641090-17				L1641090-18				L1641090-19				L1641090-20			
			12/13/2016				12/14/2016				12/14/2016				12/14/2016				12/15/2016			
				Report		Valid		Report		Valid		Report		Valid		Report		Valid		Report		Valid
Analyte	Cas No.		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS SVOC																						
OSW-8270DSIM																						
1,4-DIOXANE	123-91-1		ND	0.00817	mg/kg	---	ND	0.00844	mg/kg	---	ND	0.00809	mg/kg	---	ND	0.00831	mg/kg	---	ND	0.00808	mg/kg	---

			B-2016-6-1.5-2				B-2016-7-9-9.5				B-2016-7-11.5-12				B-2016-8-11-11.5				B-2016-8-9-9.5			
			L1641090-21				L1641090-22				L1641090-23				L1641090-24				L1641090-25			
			12/15/2016				12/15/2016				12/15/2016				12/15/2016				12/15/2016			
				Report		Valid		Report		Valid		Report		Valid		Report		Valid		Report		Valid
Analyte	Cas No.		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS SVOC																						
OSW-8270DSIM																						
1,4-DIOXANE	123-91-1		ND	0.00814	mg/kg	---	ND	0.00785	mg/kg	---	ND	0.00957	mg/kg	---	ND	0.00883	mg/kg	---	ND	0.00801	mg/kg	---

			B-2016-8-4.5-5				B-2016-9-6-6.5				B-2016-9-2-2.5				B-2016-10-4-4.5				B-2016-10-9-9.5			
			L1641090-26				L1641090-27				L1641090-28				L1641090-29				L1641090-30			
			12/15/2016				12/15/2016				12/15/2016				12/14/2016				12/14/2016			
				Report		Valid		Report		Valid		Report		Valid		Report		Valid		Report		Valid
Analyte	Cas No.		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS SVOC																						
OSW-8270DSIM																						
1,4-DIOXANE	123-91-1		ND	0.00832	mg/kg	---	ND	0.008	mg/kg	---	ND	0.00775	mg/kg	---	ND	0.00793	mg/kg	---	ND	0.00822	mg/kg	---

			B-2016-10-11.5-12				B-2016-10-20-21.5				B-2016-11-5-5.5				B-2016-11-11-11.5				B-2016-12-5.5-6			
			L1641090-31				L1641090-32				L1641090-33				L1641090-34				L1641090-35			
			12/14/2016				12/14/2016				12/15/2016				12/15/2016				12/15/2016			
				Report		Valid		Report		Valid		Report		Valid		Report		Valid		Report		Valid
Analyte	Cas No.		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS SVOC																						
OSW-8270DSIM																						
1,4-DIOXANE	123-91-1		ND	0.00887	mg/kg	---	ND	0.00868	mg/kg	---	ND	0.00906	mg/kg	---	ND	0.00825	mg/kg	---	ND	0.00881	mg/kg	---

			B-2016-12-4-4.5				B-2016-13-5-5.5				B-2016-13-10-10.5				B-2016-13-15-15.5				B-2016-14-4-4.5			
			L1641090-36				L1641090-37				L1641090-38				L1641090-39				L1641090-40			
			12/15/2016				12/14/2016				12/14/2016				12/14/2016				12/15/2016			
				Report		Valid		Report		Valid		Report		Valid		Report		Valid		Report		Valid
Analyte	Cas No.		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS SVOC																						
OSW-8270DSIM																						
1,4-DIOXANE	123-91-1		ND	0.00873	mg/kg	---	ND	0.00787	mg/kg	---	ND	0.00835	mg/kg	---	ND	0.00805	mg/kg	---	ND	0.00825	mg/kg	---

			B-2016-14-10-10.5				DUP-1				DUP-2			
			L1641090-41				L1641090-42				L1641090-43			
			12/15/2016				12/14/2016				12/15/2016			
				Report		Valid		Report		Valid		Report		Valid
Analyte	Cas No.		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS SVOC														
OSW-8270DSIM														
1,4-DIOXANE	123-91-1		ND	0.008	mg/kg	---	ND	0.0076	mg/kg	---	ND	0.00778	mg/kg	---

APPENDIX 4
(Qualified Analytical Summary table not required for this submittal)

APPENDIX 5
(Level 2 data package verification report)

January 04, 2017

Tim Roeper
Cornerstone EG
100 Crystal Run Road
Suite 101
Middletown, NY 10941

CADENA project ID: E203361
Project: Ford Ringwood Mines Project
Project number:
Client project scope reference: Sample COC only was used to define project analytical requirements.
Laboratory: ALPHA Laboratories - Mansfield
Laboratory submittal: L1641090
Sample date: 2016-12-13 2016-12-14 2016-12-15
Report received by CADENA: 2017-01-03
Initial Data Verification completed by CADENA: 2017-01-04

The following minor QC exceptions or missing information were noted:

GCMS VOC samples -004, -006, -007, -011, -013, -014, -015, -016, -017, -018, -019, -021, -022, -024, -029, -031, -031, -032, -037 and all QC batch method blank and LCS SURROGATE recoveries were outliers biased high for at least 1 surrogate. Associated client sample results were non-detect so qualification was not required based on these high bias QC outliers.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification , the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for vali dating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

43 Soil sample(s) were analyzed for GCMS SVOC-SIM Isotope dilution parameter(s).

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, LCS/LCD RPD, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at http://clms.cadenaco.com/index.cfm.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 5

Date Rec'd in Lab 12/17/16

ALPHA Job # L1641090

Client Information
Client: Cornerstone
Address: 100 Crystal Run Rd
Middletown NY, 10941
Phone: 845-695-0252
Fax:
Email: Tim.Roeper@cornerstoneeg.com

Project Information
Project Name: Ford - Ringwood
Project Location: Ringwood, NJ
Project # 140802-018
(Use Project name as Project #) ☐
Project Manager: Tim Roeper
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☒ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☒ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	A2-NJ-8270SVOC-8270	A2-NJ-PAH-8270SIM	Total Bottle	Sample Specific Comments
41090-01	B-2016-1-5-5.5	12/13/16	14:00	S	JG	X			
-02	B-2016-1-9-9.5	12/13/16	14:15	S	JG	X			
-03	B-2016-1-13.5-14	12/13/16	14:30	S	JG	X			
-04	B-2016-1-20-20.5	12/14/16	9:45	S	JG	X			
-05	B-2016-2-4.5-5	12/13/16	15:20	S	JG	X			
-06	B-2016-2-11-11.5	12/13/16	15:35	S	JG	X			
-07	B-2016-2-16.5-17	12/13/16	16:15	S	JG	X			
-08	B-2016-2-21.5-22	12/14/16	8:00	S	JG	X			
-09	B-2016-3-5.5-6	12/14/16	11:05	S	JG	X			
-10	B-2016-3-9.5-10	12/14/16	11:15	S	JG	X			

Container Type: A
Preservative: A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	12/16/16 13:30		12/16/16 13:30
	12/16/16 16:17		12-16-16 1800
	12-16-16 2250		12/16/16 2250
	12/17/16 02:35		12/17/16 02:35

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL
Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Date Rec'd in Lab 12/17/16

ALPHA Job # L1641090

Client Information

Client: Cornerstone
Address: 100 Crystal Run Rd
Middletown, NY 10941
Phone: 845-695-0252
Fax:
Email: Tim.Roeper@cornerstonegi.com

Project Information

Project Name: Ford-Ringwood
Project Location: Ringwood, NJ
Project # 140802-018
(Use Project name as Project #) ☐
Project Manager: Tim Roeper
ALPHAQuote #:

Turn-Around Time

Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☒ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☒ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

A2-NJ-SVOC-8270
A2-NJ-PAH-8270SIM

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments
41090 -11	B-2016-3-14-14.5	12/14/16	11:55	S	JG	
-17	B-2016-4-8.5-9	12/13/16	11:20	S	JG	
-13	B-2016-4-11.0-11.5	12/13/16	11:30	S	JG	
-14	B-2016-4-15-15.5	12/13/16	12:00	S	JG	
-15	B-2016-4-20-20.5	12/13/16	12:20	S	JG	
-16	B-2016-4-23.5-24	12/13/16	12:30	S	JG	
-17	B-2016-5-.5-1	12/14/16	10:15	S	JG	
-18	B-2016-5-11-11.5	12/14/16	10:25	S	JG	
-19	B-2016-5-15-15.5	12/14/16	10:45	S	JG	
-20	B-2016-6-4.5-5	12/15/16	10:10	S	JG	

Container Type: A
Preservative: A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	12/16/16 1330		12/16/16 13:30
	12/16/16 16:17		12-16-16 1800
	12-16-16 2250		12/16/16 2250
	12/17/16 12:35		12/17/16 12:35

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Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of 5

Date Rec'd in Lab: 12/17/16

ALPHA Job #: L1641090

Client Information

Client: Cornerstone
Address: 100 Crystal Run Rd
Middletown, NY 10941
Phone: 845-695-0252
Fax:
Email: Tim.Roeper@cornerstoneeg.com

Project Information

Project Name: Ford-Ringwood
Project Location: Ringwood, NJ
Project #: 140802-018
(Use Project name as Project #): ☐
Project Manager: Tim Roeper
ALPHAQuote #:

Turn-Around Time

Standard: ☒ Due Date:
Rush (only if pre approved): ☐ # of Days:

Deliverables

☒ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☒ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	A2-NJ-SVOC-8270 A2-NJ-PAH-8270SIM	Total Bottle	Sample Specific Comments
41090-21	B-2016-6-1.5-2	12/15/16	10:00	S	JG	X		
-22	B-2016-7-9-9.5	12/15/16	8:40	S	JG	X		
-23	B-2016-7-11.5-12	12/15/16	8:55	S	JG	X		
-24	B-2016-8-11-11.5	12/15/16	9:45	S	JG	X		
-25	B-2016-8-9-9.5	12/15/16	9:35	S	JG	X		
-26	B-2016-8-4.5-5	12/15/16	9:20	S	JG	X		
-27	B-2016-9-6-6.5	12/15/16	10:55	S	JG	X		
-28	B-2016-9-2-2.5	12/15/16	10:40	S	JG	X		
-29	B-2016-10-4-4.5	12/14/16	14:40	S	JG	X		
-30	B-2016-10-9-9.5	12/14/16	14:45	S	JG	X		

Container Type: A
Preservative: A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	12/16/16 13:30		12/16/16 13:30
	12/16/16 16:17		12-16-16 1800
	12-16-16 2250		12/16/16 2250
	12/17/16 02:35		12/17/16 02:35

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Page 4 of 5

Date Rec'd in Lab: 12/17/16

ALPHA Job #: L1641090

Client Information

Client: Cornerstone
Address: 100 Crystal Run Rd
Middletown, NY 10941
Phone: 845-695-0252
Fax:
Email: Tim.Roeper@cornerstoneeg.com

Project Information

Project Name: Ford- Ringwood
Project Location: Ringwood, NJ
Project #: 140802-018
(Use Project name as Project #)
Project Manager: Tim Roeper
ALPHAQuote #:

Turn-Around Time

Standard [X] Due Date:
Rush (only if pre approved) [ ] # of Days:

These samples have been previously analyzed by Alpha [ ]

For EPH, selection is REQUIRED:
[ ] Category 1
[ ] Category 2

For VOC, selection is REQUIRED:
[ ] 1,4-Dioxane
[ ] 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

Deliverables

[X] NJ Full / Reduced
[ ] EQuIS (1 File) [ ] EQuIS (4 File)
[ ] Other

Regulatory Requirement

[ ] SRS Residential/Non Residential
[ ] SRS Impact to Groundwater
[ ] NJ Ground Water Quality Standards
[ ] NJ IGW SPLP Leachate Criteria
[ ] Other

Billing Information

[X] Same as Client Info
PO # L1641096

Site Information

Is this site impacted by Petroleum? Yes [ ]
Petroleum Product:

ANALYSIS

A2-43-SVOC-8270 SIM
A2-43-PAH-8270 SIM

Sample Filtration
[ ] Done
[ ] Lab to do
Preservation
[ ] Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	A2-43-SVOC-8270 SIM	A2-43-PAH-8270 SIM	Sample Specific Comments
41090-31	B-2016-10-11.5-12	12/14/16	14:50	S	JG	X		
-32	B-2016-10-20-21.5	12/14/16	15:40	S	JG	X		
-33	B-2016-11-5-5.5	12/15/16	13:15	S	JG	X		
-34	B-2016-11-11-11.5	12/15/16	13:30	S	JG	X		
-35	B-2016-12-55-6	12/15/16	11:40	S	JG	X		
-36	B-2016-12-4-4.5	12/15/16	11:30	S	JG	X		
-37	B-2016-13-5-5.5	12/14/16	13:15	S	JG	X		
-38	B-2016-13-10-10.5	12/14/16	14:00	S	JG	X		
-39	B-2016-13-15-15.5	12/14/16	14:20	S	JG	X		
-40	B-2016-14-4-4.5	12/15/16	12:45	S	JG	X		

Container Type: A
Preservative: A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	12/16/16 13:30		12/16/16 13:30
	12/16/16 16:17		12-16-16 1800
	12-16-16 2250		12/16/16 2250
	12/17/16 02:35		12/17/16 02:35

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

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Page 5 of 5

Date Rec'd in Lab 12/17/16

ALPHA Job # L1641090

Client Information
Client: Cornerstone
Address: 100 Crystal Run Rd
Middletown, NY 10941
Phone: 845-695-0252
Fax:
Email: Tim.Roeper@cornerstoneeg.com

Project Information
Project Name: Ford- Ringwood
Project Location: Ringwood, NJ
Project # 140802-018
(Use Project name as Project #) ☐
Project Manager: Tim Roeper
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☒ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☒ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	A2-NJ-Sub-8270	A2-NJ-PAH-8270SIM	Total Bottle	Sample Specific Comments
41090 -41	B-2016-14-10-10.5	12/15/16	13:00	S	JG	X			
-42	Dup-1	12/14/16	12:00	S	JG	X			
-43	Dup-2	12/15/16	12:00	S	JG	X			

Container Type: A
Preservative: A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	13:30 12/16/16		12/16/16 13:30
	12/16/16 16:17		12-16-16 1800
	12-16-16 2250		12/16/16 2336
	12/17/16 12:35		12/17/16 12:35

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ATTACHMENT B

VALIDATION CHECKLIST SUMMARY

VALIDATED DATA	sub item	criteria reference	general observations	GCMS SVOC SIM
PROJECT SCOPE/LAB REQUIREMENTS				
SOW available?				**2009**
Scope validation criteria referenced				**CLP-2001 organics, CLP-1992 inorganics**
Lab certifications required				**New Jersey NJDEP-MA015/MA935**
Lab single blind PE samples completed				**NOT AVAILABLE**
SAMPLING ISSUES				NOT EVALUATED
SAMPLE RECEIPT OBSERVATIONS				
holding times				**OK**
preservation				**OK**
temperature of cooler - degrees C				**4.1**
COC discrepancies				**OK**
sample integrity (containers, amounts)				**4oz GLASS no pres**
ANALYTICAL/PREP GENERAL				
prep batch		LAB		**WG963086, WG963089, WG963107**
prep date		LAB		**20-Dec**
analytical batch		LAB		**WG964508, WG964509**
analytical date		LAB		**12/30,12/24, 12/25**
instrument ID		LAB		**BNA5**
Instrument Tune		METHOD	tune	**OK**
Instrument Performance Checks		METHOD	tailing, degradation	**NA**
ICAL (Initial Calibration Curve)	CURVE ID	METHOD	RRT, SPCC, CCC, CURVE FITS,	**ICAL13250**
ICAL (Initial Calibration Curve)	CURVE DATE	METHOD		**29-Dec**
ICV (Initial Calibration Verification)		METHOD	max 30%	**OK**
CCV (Continuing Calibration Verification)		METHOD	max 20%/50%	**OK**
Target Compound Lists		SCOPE/COC		**1,4-dioxane**
Reporting Limits (RL/PQL/LOQ) compliant		SCOPE	mdl 4ug/kg	**8ug/kg**
Blanks- method/calibration	method blank	NFG		**OK**
LCS (Laboratory Control Spikes)		lab control limits	by method	**40-140%, 30%**
MS/MSD (Matrix Spikes)		lab control limits	by method	**NO MS IN BATCH**
Sample duplicates		lab control limits	NA	**NA**
Internal standard reponses/RRT		METHOD	50-200%	**OK**
Surrogate recoveries		lab control limits	SVOC BN surrogates	**15-110%**
Qualitative criteria met		METHOD		**OK**
TICS (Tentatively Identified Compounds)		METHOD		**NA**
TIC blanks		NFG		**NA**
Trip blanks		NFG		**NA**
Field blanks		NFG		**NA**
Field duplicates		SCOPE		**NA**
Post Digestion Spikes (PDS)		METHOD		**NA**
Serial Dilution (SD)		METHOD		**NA**
CRQL checks performed?		SCOPE		**NA**
E flagging required		LAB		**NA**
GENERAL QC TRACKING				
Control Limits		SCOPE	see above	**LABORATORY**
Certificates of Analysis for primary standards		VALIDATOR		**NOT PROVIDED**
Working/Intermediate standard prep calculations		VALIDATOR	prep log	**OK**
Prep technique		not specified	VARIES	**3570**
Prep sample volumes/mass		not specified	VARIES	**5grams target**
OVERALL				
Data Reportable?				**YES**

E-Mail Date: 2017-01-11
E-Mail To: tim.roeper@cornerstoneeg.com
cc:

U.S. Mail: Tim Roeper
Cornerstone Environmental Group
100 Crystal Run Road, Suite 101
Middletown, NY 10941

ANALYTICAL DATA VALIDATION REPORT
Ringwood Mines/Landfill
Ford Motor Company
CLIENT PROJECT NUMBER – 140802-018
CADENA PROJECT E203361
SAMPLES COLLECTED DECEMBER 2016
SUBMITTAL #: L1641084

PREPARED BY:
CADENA, INC.
1099 Highland Drive
Ann Arbor, MI 48108
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Fax: 734-975-6709
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Date: 2017-01-11
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LISTS OF APPNEDICES

(Following Text)

LIST OF ATTACHMENTS

1.0 INTRODUCTION

The following document details an assessment of the analytical data reported by ALPHA Analytical Laboratory Mansfield and Westborough MA the data in the submittals listed below which were collected from the Ringwood Mines/Landfill site as noted . The sampling and analysis summary listing sample ID's and testing as related to the laboratory submittal numbers is presented in Appendix 1. The summary of all of the field sample results and qualifiers associated with this submittal is presented in Appendix 3. Executive summary of qualified d ata only is reported in Appendix 4. Lab deliverables relevant to this submittal are included as attachments at the end of this report.

Table 1.1

Lab Sample ID	**Sample ID**	**Collection Date**	**Collection Time**	**GCMS SVOC SIM**
		(mm/yy/dd)	**(hh:mm:ss)**	
L1641084-01	**PW-1**	**12/15/2016**	**7:30:00**	**X**
L1641084-02	**PW-2**	**12/15/2016**	**7:40:00**	**X**

Table 1.2 below lists the project -specific analytes or analyte lists associated with the methods referenced in Table 1.1:

Table 1.2

Parameter	***Reference Method***	***AnalyteListing***
Semi-Volatile Organics	OSW-8270D/SIM - ISOTOPE DILUTION	1,4-Dioxane only

All "OSW" analytical methods were referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", Third editions final update IV or latest revision (with all subsequent revisions). The "SM" analytical method was referenced from the "Standard Methods for the Examination of Water and Waste water", latest promulgated revision. "EPA" methods were referenced from the revisions noted.
Laboratory Standard Operating Procedures (SOPs) associated with the methods utilized for this laboratory submittal were not available to CADENA for the purpose of validating this SDG.

Level IV data review provides a comprehensive or extensive review of the analytical data allowing for the complete reconstruction of the chemical analysis.

All of the data that was recalculated was consistent with the reported results to within at least 2 significant figures. Final results may not recalculate exactly beyond this level of precision, in some cases, due to differences in available significant figures between the hardcopy raw data provided and the data utilized for calculations by the laboratory that came directly from the instrument. A table of the laboratory documents reviewed in preparing t his report is included in Appendix 2.

The data was reviewed in accordance with the analytical methods a nd the documents listed below: (NOTE: laboratory criteria – control limits – were utilized to evaluate the data where

available. Comparison to NFG cr iteria are noted when lab criteria was not available or for informational purposes when lab data exceeds NFG criteria).

i.) "Standard Operating Procedure HW -6 Rev12 March 2001: CLP Organics Data Review and Preliminary Review" USEPA Region 2 as identified in project QAPP.

ii.) "Standard Operating Procedure HW -2, Rev11, Jan 1992: Evaluation of Metals Data for the CLP Program" as identified in the project QAPP.

The Level VI review findings are summarized in the Executive Summary section below.

Process controls for the validation review of the level 4 laboratory data package are referenced in the tables by method/analytical group within the body of this report.
Definitions for data qualifiers that may have been incorporated into the data tables for this report are noted below:

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

1.1 VALIDATION QUALIFIER EXECUTIVE SUMMARY

VALIDATION SUMMARY

GCMS SVOC/SIM

No additional qualifications were made beyond thos e determined from level 2 verification review as noted below.

The following observations **DID NOT** result in qualification but were noted durin g the validation review:

GCMS SVOC-SIM

GENERAL METHODOLOGY – Laboratory used GCMS SVOC method 8270D -SIM with method 35 70 prep. The 1,4 -dioxane analyte concentration was quantitated against the 1,4- dioxane-D8 surrogate which was also used as the internal standard. Method is considered to be isotope dilution however the "surrogate as internal standard" technique is not considered to be the industry standard quantitation approach. This would be considered to be a "results corrected for percent recovery" quantification technique so data generated using these calculations would not be comparable to field sample result s generated by conventional internal standard quantification techniques (high bias of field sample results would be expected using this quantification technique).

Introducing the internal standard, 1,4 -dioxane-d8 prior to sample extraction treats the internal sta ndard as a surrogate so precludes using the 50% to 200% internal standard recovery rule as referenced. The internal standard recovery rule is therefore applied only to the surrogates associated with samples that had internal standards injected prior to ana lysis, and this data is provided in the Level 4, Form 8 Internal Standard and RT summary table. If the 1,4-dioxane-d8 data is to be legitimately considered to be an internal standard as well as surrogate it should, at a minimum, be subject to the 50% -200% response (recovery) criteria listed in the method. The current lower control limit for this internal standard as a surrogate is 15%. **In the case of this lab submittal the internal standard responses for both of the field samples were within the 50% -200% of daily CCV internal standard response criteria so the data is considered to be in compliance with method criteria.**

VERIFICATION SUMMARY

A level 2 data package was evaluated prior to receipt of the level 4 laboratory data package and the following findings were reported:

There were no significant QC anomalies or exceptions to report.

2.0 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) – METHOD SW846 8270D -SIM analysis with ISOTOPE DILUTION– GENERAL QC REQUIREMENTS

See Attachments for submittal-specific review summary of QC requirements noted below

The target analyte list was defined by the client-project as 1,4-dioxane.

2.1 CALIBRATION – GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) SVOCs

2.1.1 TUNING AND MASS CALIBRATION – GC/MS SVOCs

Tuning compounds were analyzed at the required frequency and met the tuning criteria specified in the method without exception.

2.1.2 INITIAL CALIBRATION – GC/MS SVOCs

Initial calibration data for SVOCs met the method criteria for instrument sensitivity , retention time drift and linearity of response unless noted otherwise in verification/validation summary.

2.1.3 INITIAL CALIBRATION VERIFICATION – GC/MS SVOCs

Initial calibration verification (ICV) standards for SVOC analyses were reviewed and met criteria specified by the laboratory with no exceptions.

2.2 CONTINUING CALIBRATION – GC/MS SVOCs

Continuing calibration standards were analyzed at the required frequency and the results met the criteria for instrument sensitivity and linearity of response unless noted otherwise in verification/validation summary

2.3 INTERNAL STANDARDS – GC/MS SVOCs

Internal standard (IS) data were reviewed and met criteria for retention time an d response. See executive summary for information concerning quantitation technique associated with internal standards.

2.4 SURROGATE SPIKE RECOVERIES – GC/MS SVOCs

If surrogate recoveries are outside of established control limits, presumably due to matrix effects, these interferences must be confirmed by sample re -analysis or other acceptable standard techniques.

If in order to overcome sample matrix interferences or to quantitate elevated target compound levels for an investigative sample, the surrogate r esults are diluted to below the laboratories limits of quantitation, these surrogate results will not be utilized to qualify data.

All surrogate recoveries were quantitated against the 1,4 -dichlorobenzene-d4 internal standard and were within the establish ed laboratory control limits unless noted otherwise in verification/validation summary. Note: surrogate analyte responses (1,4 -dioxane-D8) were also used as internal standards.

2.5 LABORATORY CONTROL SAMPLE ANALYSES - GC/MS SVOCs

A laboratory control sampl e (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed for the target analyte SVOCs. The LCS recoveries and LCS/LCSD RPD were within the laboratory control limits for all compounds of interest unless noted otherwise in verification/validation summary.

2.6 MATRIX SPIKE/MATRIX-SPIKE-DUPLICATE ANALYSES - GC/MS SVOCs

NOTE: MS/MSD QC samples were not analyzed as part of this QC batch.

Validator does not have enough information regarding the nature and consistency of the investigative field samples to apply the valid qualifiers to additional samples beyond the parent sample for the MS/MSD outlier. The end data user must determine whether or not to extend qualification based on knowledge of the investigative field samples and project requirements.

2.7 FIELD QA/QC – FIELD DUPLICATE ANALYSES - GC/MS SVOCs

There were no field duplicate comparisons performed as part of this validation request.

2.8 TARGET COMPOUNDS AND REQUIRED LIMITS OF DETECTION - GC/MS SVOCs

All target analytes were reported based on comparison to project-specific target analyte requirments.

2.9 COMPOUND IDENTIFICATION AND QUANTITATION - GC/MS SVOCs

All laboratory target compound identifications and quantitation for the client samples reviewed were acceptable without exception.

2.10 TENTATIVELY IDENTIFIED COMPOUNDS - GC/MS SVOCs

Not required for this sampling event or laboratory submittal.

2.11 BLANKS – METHOD/FIELD/CALIBRATION - GC/MS SVOCs

Method blanks are evaluated if detected above the MDL. Client sample results that are les s than 5 times the amount found in the blank for organic analytes (10X if analyte is considered to be a common lab contaminant) or less than 10 times the amount found in the blank for inorganic/metals analysis are flagged as non -detect at the RL with a UB flag if sample result is less than RL or non -detect at the concentration reported with a B flag if sample result is above the RL. See verification/validation summary for findings specific to this submittal.

3.0 REPRESENTATIVENESS EVALUATION

Representativeness is a qualitative evaluation of whether the data represents actual environmental conditions. Representativeness was evaluated using the criteria noted in the following sections.

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

3.1 SAMPLE PRESERVATION AND HOLDING TIMES

Holding time criteria, which reflec t the length of time after sample collection that a sample or extract remains representative of environmental conditions. Depending on the analysis, either one or two holding times were evaluated.

i.) For those analyses that do not include a sample extraction , only one holding time was evaluated: the length of time between sample collection and analysis.

ii.) For analyses that require sample extraction prior to analysis, two holding times were evaluated: the length of time from sampling until extraction and the length of time from extraction to analysis.

Holding times are compared to standard method specific holding times accepted or recommended by the United States Environmental Protection Agency (USEPA). Those holding times outside of USEPA acceptance criter ia are qualitatively evaluated to determine their effect on sample representativeness.

All sample extractions and/or analyses were performed wit hin the specified holding times unless noted otherwise in verification/validation summary.

EPA Sample Holding Time and Preservation Requirements

Parameter	*Reference Method*	*Matrix*	*Preservation & Storage*	*Holding Times*
Semi-volatile Organics by GCMS	OSW-8270D-SIM	PAINT	Refrigeration 0-6°C	14 days Extraction 40 days Analysis

3.2 METHOD BLANK SUMMARY

Representativeness was also evaluated by analysis of laboratory method blanks and field equipment blanks. Laboratory method blanks and field equipment blanks are used to identify sources of contamination not associated with environmental conditions.

4.0 USABILITY AND COMPARABIILTY

Usability of data was evaluated by assuring that all the analytical requests were met, samples were received in the proper condition, and all analyses were performed within the appropriate holding times unless noted otherwise in verification/validation summary

No data evaluated within this delivery group was considered unusable (qualified with an R flag) due to sample integrity, sample matrix interference or batch quality control issues unless noted otherwise in verification/validation summary.

5.0 QC SUMMARY

All sample results were compliant with the project specific QAPP standard (if available) for usability with exceptions defined by validation and verification qualifiers as applied. Please reference the following tables for a summary of the investigative field sample data and their valid qualifiers based on Level 4 technical review of the analytical data.

APPENDIX 1
(Sample Analytical Summary – SAS table)

SAMPLING AND ANALYSIS SUMMARY

CADENA Project ID: E203361
Laboratory: ALPHA Laboratories-Mansfield
Laboratory Submittal: L1641084

Lab Sample ID	Sample ID	Collection Date (mm/yy/dd)	Collection Time (hh:mm:ss)	GCMS SVOC SIM
L1641084-01	PW-1	12/15/2016	7:30:00	X
L1641084-02	PW-2	12/15/2016	7:40:00	X

APPENDIX 2
(Laboratory Level 4 Data Package Table of Contents)

Table of Contents

APPENDIX 3
(Analytical Results Summary – ARS Table)

Analytical Results Summary

CADENA Project ID: E203361
Laboratory: ALPHA Laboratories - Mansfield
Laboratory Submittal: L1641084

		Sample Name:	PW-1				PW-2			
		Lab Sample ID:	L1641084-01				L1641084-02			
		Sample Date:	12/15/2016				12/15/2016			
Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier
GC/MS SVOC									
OSW-8270C/D-SIM									
1,4-DIOXANE	123-91-1	ND	7.17	ug/kg	---	ND	6.96	ug/kg	---

APPENDIX 4
(Qualified Analytical Summary table not required for this submittal)

APPENDIX 5
(Level 2 data package verification report)

January 04, 2017

Tim Roeper
Cornerstone EG
100 Crystal Run Road
Suite 101
Middletown, NY 10941

CADENA project ID: E203361
Project: Ford Ringwood Mines Project - Paint
Project number:
Client project scope reference: Sample COC only was used to define project analytical requirements.
Laboratory: ALPHA Laboratories - Mansfield
Laboratory submittal: L1641084
Sample date: 2016-12-15
Report received by CADENA: 2017-01-04
Initial Data Verification completed by CADENA: 2017-01-04

There were no significant QC anomalies or exceptions to report.

Data verification f or the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods a s references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

2 Waste sample(s) were analyzed for GCMS SVOC-SIM Isotope dilution parameter(s).

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, LCS/LCD RPD, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

The definitio ns of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at http://clms.cadenaco.com/index.cfm.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

ATTACHMENT A

CHAIN OF CUSTODY DOCUMENT(S)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab 12/17/16

ALPHA Job # L1691084

Client Information

Client: Ford - Ringwood (cornerstone)
Address: Peters Mine Road
100 Crystal Run Rd, Middletown, NY 10941
Phone: 845-695-0252
Fax:
Email: Tim.Roeper@cornerstoneeg.com

Project Information

Project Name: Ford - Ringwood
Project Location: Ringwood, NJ
Project # 140802-018
(Use Project name as Project #) ☐
Project Manager: Tim. Roeper
ALPHAQuote #:

Turn-Around Time

Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☒ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☒ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

A2-MS-SVOC-8270
A2-MS-PAH-8270SIM

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	A2-MS-SVOC-8270	A2-MS-PAH-8270SIM	Sample Specific Comments
41084-01	PW-1	12/15/16	7:30	Paint Waste	JG	X		
-02	PW-2	12/15/16	7:40	Paint Waste	JG	X		

Container Type: O
Preservative: A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	12/16/16 13:31		12/16/16 13:31
	12/16/16 16:17		12-16-16 1800
	12-16-16 2250		12/16/16 2250
	12/17/16 02:35		12/17/16 02:35

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ATTACHMENT B

VALIDATION CHECKLIST SUMMARY

VALIDATED DATA	sub item	criteria reference	general observations	GCMS SVOC SIM
PROJECT SCOPE/LAB REQUIREMENTS				
SOW available?				**2009**
Scope validation criteria referenced				**CLP-2001 organics, CLP-1992 inorganics**
Lab certifications required				**New Jersey NJDEP-MA015/MA935**
Lab single blind PE samples completed				**NOT AVAILABLE**
SAMPLING ISSUES				NOT EVALUATED
SAMPLE RECEIPT OBSERVATIONS				
holding times				**OK**
preservation				**OK**
temperature of cooler - degrees C				**4.3**
COC discrepancies				**OK**
sample integrity (containers, amounts)				**PLASTIC BAGS**
ANALYTICAL/PREP GENERAL				
prep batch		LAB		**WG963084**
prep date		LAB		**20-Dec**
analytical batch		LAB		**WG964509**
analytical date		LAB		**3-Jan**
instrument ID		LAB		**BNA6**
Instrument Tune		METHOD	tune	**OK**
Instrument Performance Checks		METHOD	tailing, degradation	**NA**
ICAL (Initial Calibration Curve)	CURVE ID	METHOD	RRT, SPCC, CCC, CURVE FITS,	**ICAL13258**
ICAL (Initial Calibration Curve)	CURVE DATE	METHOD		**29-Dec**
ICV (Initial Calibration Verification)		METHOD	max 30%	**OK**
CCV (Continuing Calibration Verification)		METHOD	max 20%/50%	**OK**
Target Compound Lists		SCOPE/COC		**1,4-dioxane**
Reporting Limits (RL/PQL/LOQ) compliant		SCOPE	mdl 4ug/kg	**8ug/kg**
Blanks- method/calibration	method blank	NFG		**OK**
LCS (Laboratory Control Spikes)		lab control limits	by method	**40-140%, 30%**
MS/MSD (Matrix Spikes)		lab control limits	by method	**NO MS IN BATCH**
Sample duplicates		lab control limits	NA	**NA**
Internal standard reponses/RRT		METHOD	50-200%	**OK**
Surrogate recoveries		lab control limits	SVOC BN surrogates	**15-110%**
Qualitative criteria met		METHOD		**OK**
TICS (Tentatively Identified Compounds)		METHOD		**NA**
TIC blanks		NFG		**NA**
Trip blanks		NFG		**NA**
Field blanks		NFG		**NA**
Field duplicates		SCOPE		**NA**
Post Digestion Spikes (PDS)		METHOD		**NA**
Serial Dilution (SD)		METHOD		**NA**
CRQL checks performed?		SCOPE		**NA**
E flagging required		LAB		**NA**
GENERAL QC TRACKING				
Control Limits		SCOPE	see above	**LABORATORY**
Certificates of Analysis for primary standards		VALIDATOR		**NOT PROVIDED**
Working/Intermediate standard prep calculations		VALIDATOR	prep log	**OK**
Prep technique		not specified	VARIES	**3570**
Prep sample volumes/mass		not specified	VARIES	**5grams target**
OVERALL				
Data Reportable?				**YES**